A Naval Safety Center Publication

# approach

SEPTEMBER 1972 THE NAVAL AVIATION SAFETY REVIEW

DEPOSITED BY THE
UNITED STATES OF AMERICA

NAVY

THE AIR boss transmitted, "Off the bow, off the bow, you're on fire. Eject! Eject!" . . . and the crews of *two* F-4s ejected. Only one crew was in trouble – the other crew abandoned a perfectly good aircraft.

Four aircraft had been launched within a 30-second period preceding the accident. The catapult sequence was: an F-4J on No. 1, an A-7E on No. 3, an F-4J on No. 2, and an A-7E on No. 4. The air officer, concerned with launches off both the bow and waist cats, had only a short time to observe each aircraft as it was launched.

As the second F-4 cleared the bow, flames were observed trailing the aircraft. On departure frequency the air boss transmitted, "Off the bow, off the bow, you're on fire. Eject! Eject!" The pilot scanned the engine instruments and firewarning lights. All looked normal. He then looked at the rear view mirrors and saw his tail section engulfed in flames. He gave the command to eject over the ICS and the RIO initiated sequenced ejection. Both ejections were successful and the crewmembers were subsequently picked up by the plane guard helo.

Meanwhile, the crew of the first F-4, which had launched seconds earlier off the No. 1 cat, was having communication problems. During the cat stroke the pilot had lost both ICS and UHF. Once airborne, he regained ICS momentarily and heard his RIO make some comment about the shot, then lost ICS again. Regaining ICS a second time, he heard the RIO request he come up hot mike. He attempted unsuccessfully to let the RIO know he *was* on hot mike.

The next thing he heard was the broken radio transmission from the air boss instructing, ". . . . you're on fire. Eject! Eject!" Thinking the transmission was meant for him, the pilot immediately initiated sequenced ejection – with no attempt to verify the fire by reference to engine instruments or firewarning lights. Both crewmembers were picked up by the plane guard helo.

Investigation established the probability that the *second* F-4 launched had experienced a centerline tank fire as a result of a catapult bridle slap. The mishap board found no fault with the pilot's actions based on the UHF transmission and confirmation of an actual fire. However, the board members felt that had the pilot been advised that the fire was coming from the centerline tank, he could possibly have saved the airplane by terminating afterburner and/or jettisoning the centerline tank.

Ironically, this very emergency had been briefed in detail during a safety standdown the previous week. The briefing covered pilot procedures, centerline tank jettison, afterburner termination, probable consequences, possibilities of explosions, eyewitness accounts, and related aspects. No one, however, addressed the possibility that *identification* of a centerline tank fire would be a factor – as it seems to have been in this case, to wit, the nonspecific transmission of the air boss.

Continued

An endorser to the AAR stated, ". . . . it is a better than even chance that this aircraft would not have been lost had the pilot *known* he had a *centerline tank fire.* Given this conclusion, however, it is fair to question how anyone can always be positive of the type fire (centerline, a fuel line, etc.) which, if wrongly identified, presents a possibility that both airplane *and* crew will be lost due to explosion or control loss. To this question, I can only say that this accident was personally observed by this endorser while circling off the port quarter at 1500 feet – and there was no doubt in my mind that a centerline tank fire existed. (The extreme rapidity in which the order to eject was given and complied with prevented any additional verbal guidance or countermand.)

"Further, F-4 centerline bridle slap/fires have always followed the same pattern – huge fireball just as the airplane leaves the catapult. Therefore, I submit that the probability of incorrectly identifying a centerline tank fire is so sufficiently remote as to warrant standardized action from both aircrew and ship. This action will be the subject of a forthcoming NATOPS change recommendation.

"To analyze the cause factors relating to the loss of the *first* F-4 launched, which was a perfectly good and sound flying aircraft at the time of ejection, was a most difficult task. For the very root of the matter probably lay in the 'split-second personality' of the principals involved, and this endorser does not profess (or expect from the board) deep knowledge of personal psychology. However, some undoubtedly relevant facts are evident, some clearly, some intuitively. That both pilot and RIO were instantly prepared to eject on a beautiful bright, clear afternoon, without so much as cursory supporting evidence of aircraft fire, is indicative of a degree of willingness to abandon an aircraft far in excess of any experienced by this endorser. It is true that the air boss has a most recognizable voice and was urging quick abandonment of the aircraft. However, the *total* process which motivated this ejection is one which is obviously more complex and elusive.

"The acceptance of intuition as a prime motivator ('Thinking I was on fire, I did not hesitate – I initiated ejection') is most alarming. It is just possible that the discussion of this type emergency at the previous week's safety standdown so impressed these two men that they were just waiting for it to happen, e.g., '. . . . and I assumed that it (the fire) may have been caused by the centerline tank . . . .' Although, to this end, why didn't the pilot jettison the centerline tank rather than eject? The answer to these questions and all those raised and hypothesized by them is left wanting.

"For whatever the reasons, it is clearly evident that the communication gap in both the airplane's ICS system and in the lack of specific direction by the air boss was the final catalyst needed to evoke the ultimate response from the flight crew. The past performance of both members of this crew, dating back to at least through the last cruise, shows excellent airmanship with no evidence that either man harbored an excessive degree of flight anxiety or fear. At least not to the extent that a commander might suspect irrational action in times of stress. Therefore, this endorser must conclude with the board that ejection was an instinctive act based on a breakdown in the logic processes, common sense, and good judgment of both members of the flight crew."

"Aircraft off the bow, you're on fire. Eject! Eject!" Such transmissions received by a pilot who can identify with the stated location are guaranteed to start the adrenalin flowing and can be the catalyst for a reactive ejection. This may be desirable if the situation actually involves the imperiled aircraft and crew and dictates an ejection. It is most undesirable if a crew with no emergency responds.

There is another recent recorded instance in which a pilot ejected from an aircraft with no existing malfunction. He did so simply because he believed himself to be *in extremis* upon hearing an authoritative transmission broadcast with marginal identification due to the urgency of the moment – the only thought being to save his life.

No fault is found with the fact that such an emergency demands decisive action to communicate the facts to the pilot/crew involved. However, an emergency transmission must be tempered with sufficient thought to *positively identify only the aircraft and crew with the emergency,* leaving no doubt in the mind of all airborne pilots as to which aircraft is imperiled. It is also incumbent upon any pilot who believes that his is the aircraft involved, to carefully check for positive instrument or visual indications of fire or gross emergency before initiating ejection (assuming controlled flight).

Because of the possibility that a similar situation could recur, a type commander addressed the problem last year in a message concerning F-4 bridle slaps and summed it up in the final paragraph: " . . . We do not want to lose any aircrews due to indecision or late decisions, but we cannot afford to lose aircraft due to premature decisions. It behooves all concerned with aircraft operations to reevaluate their emergency procedures. Clearly, when the tower or anyone airborne recommends that a crew eject, care must be exercised to identify the affected aircraft in order to preclude inadvertent ejection from another aircraft. This applies

to anyone with radio communication capability. Identify the emergency aircraft as *explicitly* as possible in the time available."

Less than a month after release of the type commander's message, the wisdom of this safety philosophy was evidenced in an F-4 bridle slap incident. The F-4 was catapulted at night in the following configuration:

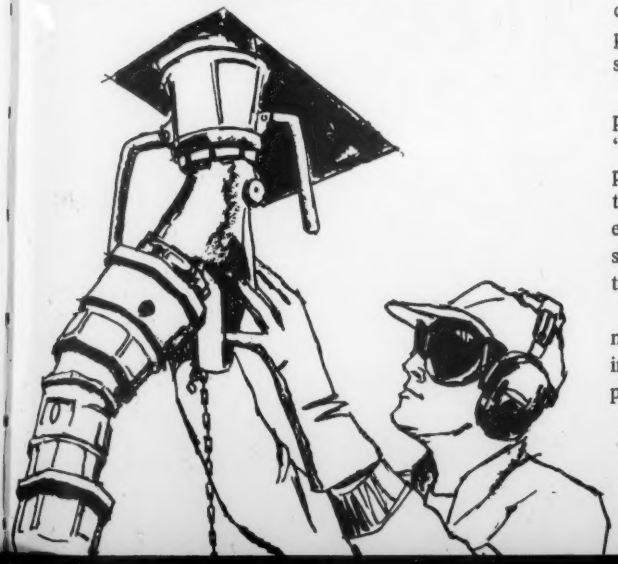
- 600-gallon centerline external fuel tank.
- LAU-17/A wing missile pylon.
- One AIM-9G each on stations 2 and 8.
- One outboard wing pylon each on stations 1 and 9.
- TER.
- TER adapter.
- LAU-7A launcher.
- One AIM-7E2 on fuselage station 3.

Flight conditions were IFR with no visible horizon and a scud layer from 800 to 1200 feet. As the *Phantom* became airborne a large fuel fire erupted from beneath the aft fuselage area indicating probable centerline tank rupture. The air officer promptly identified the crew as *explicitly* as possible, *clearly* and *briefly* stated the situation, and recommended centerline tank jettisoning. The pilot actuated the external stores emergency release button, jettisoning all external stores. This extinguished the fire immediately. Following an airborne visual check for damage, a normal recovery was made aboard the carrier. ◄

# Maintenance Error and Safety

EACH year maintenance error is listed in the overall statistics as one of the substantial factors in causing aircraft accidents. Although this percentage is low compared to other causes, the high number of maintenance error incidents being reported indicates the existence of many maintenance malpractices. These errors can compound and lead to situations aircrews can't handle, resulting in loss of aircraft and/or personnel.

If we are to be successful in accident prevention, weaknesses in maintenance practices have to be identified and corrected. Generally, maintenance error accidents/incidents occur because of a lack of conscientious supervision or inadequate quality assurance. When a mishap occurs, investigators can usually identify the problem area or even the responsible individual. However, this is "after the fact."



Failure to properly adhere to publications, noncompliance with quality assurance instructions and procedures, improper use of equipment, and inadequate supervision (especially outside of normal working hours) all contribute to ineffective maintenance management. Quality assurance is not the only focal point responsible for ensuring that "quality" maintenance is being performed. How much direct observation/supervision is practiced within your command? Officer and CPO presence on the flight line, in the hangar, on the flight/hangar deck, in work spaces, and individual work centers is necessary to conduct a meaningful accident prevention program.

Are your personnel properly trained and qualified to perform maintenance operations safely? An active maintenance safety program ensures the continued education of all maintenance personnel by aggressive, qualified instructors. Ensure current, accurate publications and material are available for reference and self-study.

Commands should have adequate procedures to prevent tools and other foreign objects from being "lost" in aircraft after maintenance. The importance to properly maintain and calibrate at required intervals torque measuring devices and other precision measuring equipment should be continually emphasized. Personnel should be properly trained and authorized in writing to turn and move aircraft.

Timely identification of maintenance weaknesses that may jeopardize safety is everyone's business. An in-depth look at maintenance management is a must to prevent mishaps.

Adapted from a COMFITWING ONE msg

**All pilots are urged to read this article. In capsule form Dr. Schultze has revealed the subsurface motives of the risk taker. In the flying business all too often the decision making factor is *desire* instead of *knowledge*.**



# Knowledge vs Desire

By Dr. Victor E. Schultze, Jr.

ONE of the most difficult aspects of flight safety education is the conversion of skeptics into believers. Aircraft accidents will generally accomplish this, but only if the person being converted is involved in the accident himself or has a close friend involved in one. Needless to say, this is the undesirable way.

A pilot must know *where* and *how* he is liable to be involved in an accident. Not just in relation to emergencies and other obvious pitfalls, but in relation to the situations and environmental atmospheres that precipitate emergencies and potential accidents. These are the subtle and subconscious causes of accidents, and they are the most heinous of all the causes in that they are so obvious and plain, but yet so nebulous.

We are all human, and because of this, we share common failings. There are three main peculiarities of the species *Pilotorum humanis* that account for the majority of aircraft accidents. Do not deny these manifestations of human nature, because you have them like the rest of our breed. If you have not noticed them by now, you will eventually . . .

*The first* of these peculiarities is the fact that men tend to be prouder of their willingness to take a chance than of their caution, conservation, and carefulness. No doubt many of us can recall flying in marginal weather to make that date or stretching our fuel supply to avoid a refueling delay, or even attempting hazardous flights in aircraft we are not fully qualified to be flying. Sure, we all made it. From the stories we hear, we would think the odds are predominantly in our favor, but are they? Unfortunately, testimony to the contrary reposes quietly in flight safety files under the heading of "Pilot Factor."

While remembering these talks of daring episodes, how many can remember the times you have heard of canceled flights because of weather or of diverting before reaching the destination because of low fuel? Not many, I'll wager. Why? Because it is human nature to romanticize, to startle, to glamorize. Flying is a romantic business. It is so because it is hazardous.

Any profession that involves hazards over and above those encountered in the more common occupations is romantic. Who does not admire the bullfighter, the mountain climber, the auto race driver? There is an undeniable human tendency to romanticize the risk-taker more than the man who figures a way to avoid the risk.

To what does this all add up? Simply this: conservatism and caution must compete with a subconscious tendency to regard these qualities as a form of timidity unworthy of a pilot.

*The second* undesirable peculiarity of human nature is the fact that men tend to use their powers of logic and reasoning to find justification for the things they want to do rather than to determine what is best to do. In other words, we tend to compromise our better judgment in favor of our desires by rationalizing.

Basically man is a creature of emotions, feelings, impulses, and unrecognized urges, all kept under precarious control by a flimsy bridle of intelligence, rationality and logic, and the painful whip of authority and social pressure. Most of us, when confronted with a problem involving a conflict between what we know we should do and what we would like to do, tend to seek a way to satisfy our desires while convincing ourselves that it is the proper thing to do.

"I'd sure like to get back to play in that golf tournament this weekend, but the weather looks pretty mean," we say. "What the heck, I need some weather time anyway, and if I stay low I probably won't get any icing." This is rationalization. "I'd like to get home. I know the weather is bad and I shouldn't go. Anyway, I need some weather time. How convenient. Warm up the golf sticks, I'm on my way!"

When man's basic nature, his fundamental urges and strong desires pull him toward one decision, and his education inclines him toward another, all too frequently he will go with his feelings.

Now *the third* undesirable characteristic of man is this: men will risk losses out of all proportion to possible gains if they feel that through their skill and luck they can probably avoid the loss. Why do people in automobiles attempt to pass on hills or blind curves? Why do pilots flying a poor landing approach go on and attempt to land when they know they should go around? They know better. Why do they do it?

*Why?* Simply because it is one of those undesirable human quirks. What is to be gained and what is to be lost? A few minutes' time in the case of the former, a life in the case of the latter. What gambler would play odds like that? Still, if someone asked if you were a gambler, how would you answer?

If you were to sit with a man in his living room and give him these situations, he would tell you he would do the safe thing. But put him in one of the above situations and see what he does. More than you would expect will gamble. It is human nature, and it comes back to the old conflict of knowledge versus desire.

Being a pilot is a hazardous profession, but it is only as hazardous as you want to make it. Control your desires, and be aware of the traps human nature has laid for you. In years to come, remembering what you have read here may save your life.

ATC "Approach to Safety"

# In The Readyroom

*LT Con:* Hi, Jack. How was your hop?

*LT Pro:* Real fine. Smitty flew an outstanding flight . . . didn't you, Smitty?

*LT Smith:* If you say so, I'll be the first to agree.

*LT Con:* Well, hope I get you for *my* stan ride next week . . . seeing as how easy you are.

*LT Pro:* Now, don't get carried away. Smitty and you, too, are good friends but when it comes to stan rides . . . I'm friendless.

*LT Smith:* You know something? I believe it . . . especially after this morning. I've never had so many different maneuvers, emergencies, and problems thrown at me during one flight. All that study last week paid off.

*LT Con:* 'Course, I'm only pulling your leg, Jack. I *know* you stick to the script on a stan ride and tell it like it is when the flight's over. But . . . I think you know as well as I that not all stan evaluators do. Take Fred Cassidy for instance . . . He wouldn't give you a down if you stalled and spun in on final. He's a real nice guy but I don't know if he does much for the stan program.

*LT Smith:* I've been thinking about that, too. I don't mean Fred in particular but the NATOPS/stan program in general. Not only is there an occasional case where the evaluator helps out a weak buddy . . . there's some even more fundamental problems.

One suggestion I've heard which makes a lot of sense to me is to put NATOPS under the aviation safety officer. I mean, that's what NATOPS is all about . . . safety . . . so why shouldn't the aviation safety officer honcho the program?

*LT Con:* Well, for one thing you'd have a relatively junior officer running a real big piece of the show. This becomes even more apparent when you consider some of the other suggestions which have been bandied about lately – like putting the quality assurance officer under the safety officer. It would really take a big wheel to handle the show then.

*LT Pro:* Well, that might not be such a problem. There's a movement under way now to assign a senior officer to the ASO billet . . . and to give him department head status, make safety jobs more career-enhancing, etc. The idea of operating as safely as practicable – achieving optimum safety – is a real live one. It's here to stay and we can expect the aviation safety officer to attain more status and authority.

However, I don't think we'll see the day when the NATOPS/standardization program and quality assurance program come directly under the aviation safety officer for day to day operation.

*LT Smith:* Why not? These functions certainly have a lot to do with flight safety.

*LT Pro:* Right you are. But then so does just about everything done by anyone in the squadron. Take operations . . . scheduling, development of the training syllabus, etc., all have a direct connection with aviation safety . . . but I don't think anyone would suggest putting these under safety. If so, then by extension we could argue that the entire maintenance and operations departments should be put under safety.

*LT Con:* Now you're getting carried away. You know there's a difference between NATOPS and quality assurance procedures and operations and maintenance.

*LT Pro:* No, I don't know anything of the sort. It's true that many of our NATOPS and QA procedures have been developed as a result of accidents – or to prevent

accidents – but . . . NATOPS and quality assurance are not something separate and apart from operations and maintenance. Sure, many of the procedures deal with critical areas of operations and maintenance . . . loss of an engine on takeoff . . . or use of cotter keys when rigging controls . . . but these are still integral aspects of operations and maintenance.

So, granted NATOPS certainly has a lot to do with safety, it also has a lot to do with all operations . . . from a good takeoff, to good formation flying, to putting ordnance on a target, to winning in ACM. In short, NATOPS isn't only about being safe, *it's all about the best way to aviate.*

*LT Smith:* Then why have an aviation safety officer at all? If everything belongs to operations and maintenance, what's the function of an aviation safety officer? Isn't he a fifth wheel?

*LT Pro:* Not at all. Ideally, operations and maintenance would be organized and operate in the safest manner *possible*. If we ever achieve that ideal . . . not likely in the near future . . . then the value of an ASO would be debatable. Unfortunately, we are some way from achieving the ideal. Individuals will continue to err and mishaps will continue to occur. The ASO will continue to be needed to ferret out unsafe practices and situations. He'll be needed to bring these to the attention of the operators and to educate them in ways to avoid hazards. When worse comes to worse, he's needed to study mishaps and ensure that proper reports are made. To boil it all down, he needs to be a strong adviser to all hands, from the CO on down. And he needs sufficient status and backing to make his recommendations heard . . . and complied with.

*LT Con:* Still, it seems he should be directly involved in such matters as NATOPS and QA.

*LT Pro:* Yes, he should. He should work closely with the NATOPS officer and the quality assurance officer, advising, urging, recommending, assisting . . . come to think of it, he *should* be doing this in all areas.

*LT Con:* Sorry I don't have time to continue this but I have to brief for my hop. See you later.

TO BE CONTINUED FROM TIME TO TIME. ◄

"Our objective must continue to be improved operational efficiency and capability with maximum possible safety and minimum possible cost." – CNO.

# The 'New Approach' C

IN November 1971, CNO issued a message aimed at updating the naval aviation safety program. The new program was based upon an indepth study of all facets of naval aviation safety. It contained much that was new . . . so much, in fact, that Vice Admiral M.F. Weisner, former DCNO (Air Warfare), labeled it "A New Approach." (See the December 1971 APPROACH.)

A number of specific actions were directed as part of the new program. Equally important, many *new proposals* were set forth with a request for comments and recommendations from the Fleet. Fleet response to the proposals has now been subjected to intense review by the OPNAV staff. All comments received were carefully considered and evaluated in relation to existing policy and directives. Specific OPNAV actions, conclusions, and policy resulting from the review, to date, were promulgated in a recent CNO message. The substance of this message follows:

• *NATOPS*. The existing NATOPS program is sound. Adequate machinery exists for enforcing compliance with directives and disciplining violators. The program has the flexibility to permit type commanders, COMFAIRS, and others in the chain of command to issue implementing directives as required for a viable program that meets the needs of the various communities.

• *Training of Safety Officers*. OPNAVINST 3750.14B, soon to be issued, will require formal training for all unit safety officers. The safety officer training syllabus will be modified to incorporate recommendations received from the Fleet.

• *Pilot/NFO Training Jackets*. OPNAV plans to distribute to type commanders (in July 1972) a pilot/NFO training and performance jacket, to include administrative and handling procedures. In the meantime, careful maintenance of the pilot/NFO logbook as required by OPNAVINST 3710.7F (para 943H) will materially assist commanding officers in evaluating flight crew performance.

• *Establishment of a Maintenance Control NEC*. A maintenance control NEC has not been established to date as it cannot be determined that it will serve a useful purpose. Maintenance training review conferences will be directed to continue study of this area.

• *Establishment of a Line Maintenance Rating (AL)*. This is currently under active consideration.

• *Investigation of Mishaps by Superiors in the Chain of Command*. OPNAVINST 3750.6H provides authority for an ISIC (immediate superior in command) or other superiors in the chain of command to convene aviation mishap boards. Utilization of this provision is encouraged when, in the opinion of the ISIC or other senior, the interests of aviation safety or the Navy are best served. The next revision to OPNAVINST 3750.6H will be more specific on this provision.

• *Air Combat Maneuvering*. ACM currency requirements for replacement training squadrons have been established and will be incorporated into the syllabus.

# Continues

• *Disregard of Rules and Regulations.* An area demanding improvement in aviation safety is elimination of those accidents which result from willful disregard of NATOPS or established rules of sound airmanship. Flathatting has long been recognized as one flight violation that results in severe disciplinary measures, if the pilot survives the incident. Other violations, while not as spectacular – and not reflecting as great a degree of willful disregard for instructions, orders, etc. – as flathatting, nevertheless result in needless mishaps and the loss of millions of dollars annually. Accordingly, the following CNO policy has been established in regard to those personnel who exhibit a willful disregard of NATOPS or existing instructions, with a resultant mishap, incident, flight violation, or damage to government or private property:

(1) Comply with procedures set forth in OPNAVINST 3750.6H.

(2) Conduct an investigation in accordance with paragraph 0902(3) of the JAG manual.

(3) If poor airmanship appears to be a factor in the mishap, the aircrewman involved will be referred to a naval aviator evaluation board in accordance with Article 3410300 of BUPERS Manual to determine competence for retention of flight status.

• *NAMP (Naval Aviation Maintenance Program).* The technical aspects of NAMP have been thoroughly evaluated and found completely adequate to maintain aircraft in a safe flight condition. Yet, we continue to have accidents because well-established and required procedures are not followed. Failure to adhere to procedures may result from lack of knowledge (includes such things as inadequate training and/or lack of definitive personnel qualification standards), negligence, lack of supervision, and/or expedient shortcuts. These deviations often result in mishaps with damage to valuable assets, unnecessary expenditure of austere funds, and injury to personnel. Chapter 7 of U.S. Navy Regulations grants the commanding officer authority to revoke qualifications or take such disciplinary action as may be appropriate. It is expected that each deviation from NAMP procedures will be critically examined to determine cause, responsibility and culpability for noncompliance, and corrective action required to prevent a recurrence.

The CNO message concluded by noting that "Our objective must continue to be improved operational efficiency and capability with maximum possible safety and minimum possible cost." ◄

"Flying Without Feathers Is Not Easy"
Titus Maccius
Plautus 254-184 BC

# Coolstone and the Weatherman

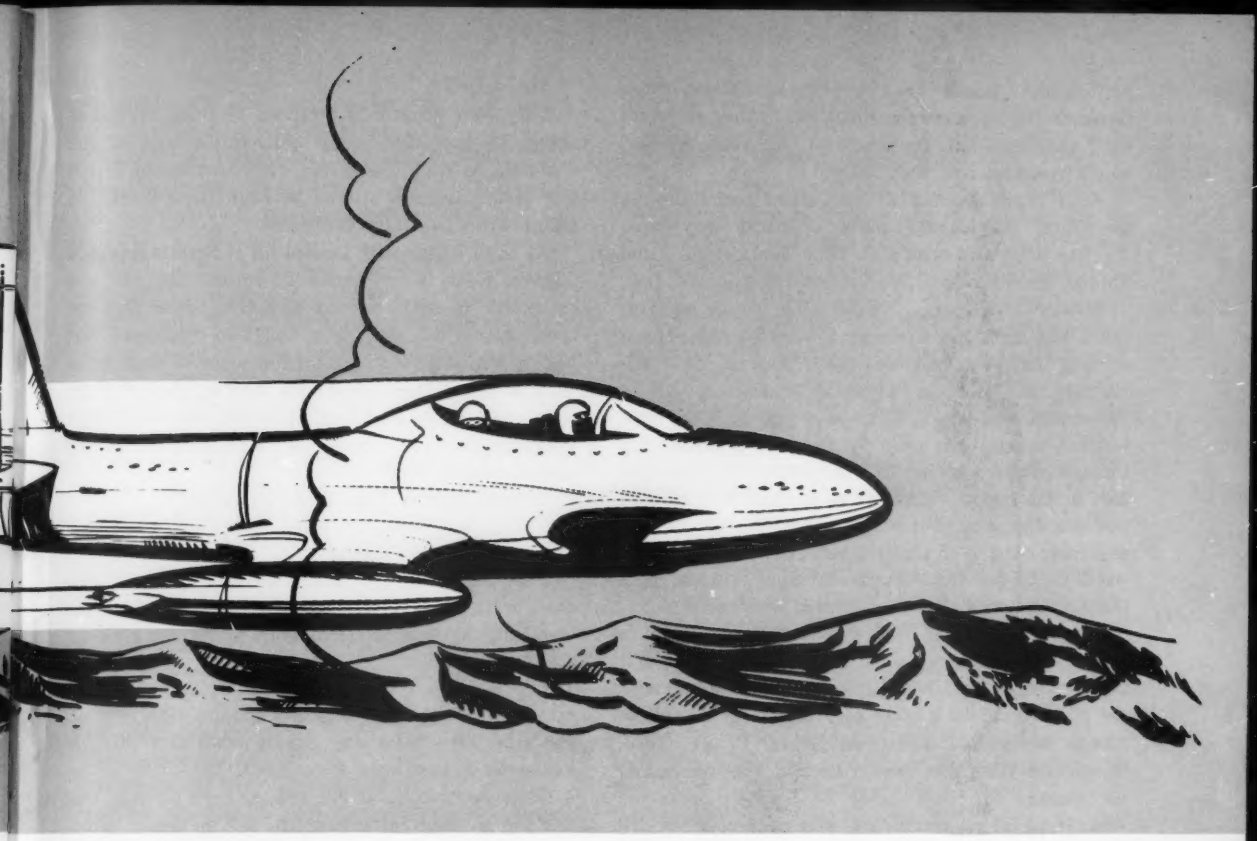
By Roger G. Crewse
ADC/SEY

COOLSTONE One and Two had been terrorizing the Spokane Guard Squadron for several days on a "We're here to help you" visit. Finally, much to the relief of the Guard Commander, they had expended the majority of their vast "we are here to help you" expertise and it was now time for them to go home.

They stumbled out to their old, weary, but hopefully trustworthy T-bird. As they neared, they checked it carefully for any major puddling of fluids underneath, or substantial trickles that *might* indicate a problem, which would keep them beyond their last clean shorts time.

They were both ready to go home, but not nearly as ready as their hosts were to have them go. In fact, not only was the Group Commander with them, but even the Chief of Maintenance, an unheard of honor. He had really come along so as to closely supervise any quick-fix activities that might become necessary at the slightest hint of an abort. For the starting chores he had two chiefs present who could rebuild a T-bird (and had) in a very short while, should it become necessary.

With the preflight completed, and only those few hip pocket write-ups against the bird, it was obvious that the



T-bird was capable of flight to Colorado Springs. The first major decision that One and Two made was whether they would go direct or have to land at some intermediate base. They solved that problem when they found that the weather at the Springs was 4000 broken, and that the effective tail wind at altitude was 50 knots. There was no forecast change expected either for the winds or the Colorado Springs weather.

The first meaningful dialogue Coolstone One and Two had concerning the proposed flight was about who was going to fly the front seat. As Two started up the ladder for the front seat position, One said: "Now wait just a minute. You flew it out. I fly it back. OK?"

"Well," said Two with an innocently injured tone sneaking into his voice, "the chutes and stuff are already in and I didn't think, in deference to your age, you would care to go through the exercise of changing them."

"Look," said One, "in deference to my rank, which is considerably higher than yours, and which should really not be necessary for me to point out, and in deference to my age, which is certainly not debatable, you switch the equipment and I will fly the front seat. I remind you of the fact that you conned me into the back coming out, knowing full well that you would get two sorties and I probably would get only one going back."

"Yes, Sir," said Rock Two, and quickly set about transferring the equipment.

They started up, got the clearance, and taxied out, failing to note the exalted expressions on the faces of their hosts.

"Not a bad outfit," said One to Two.

"Rog," affirmed Two, "but not as professional as they could be. I sure wrote them up for not having five guys towing that aircraft. Can you imagine? Only three."

"That was pretty bad," said One, "and I got them cold-turkey on those jacks underneath the 101. *Not even stenciled this year.* I'll be interested to see their explanation. I didn't write them up for the light bulb burned out in the latrine though. I just discussed it with the Commander. He assured me that it would be changed. The undated, cracked hard-boiled eggs are going into the report. I didn't compromise on that."

The discussion was cut short as they neared the runway. They went through Last Chance, made their pretakeoff checks, and were released by the tower to have at it. After takeoff, the T-33 wearily began its climb to FL 330. Their less than spectacular climb

performance caused Two to remark, "Those climb figures in the book are something else. If they ever were right, they must have represented a T-33 years ago that would have been a pure joy to fly."

After finally leveling off with cruise power at 96%, the first groundspeed check indicated they were clipping along at a brisk 420. They would arrive at the Springs, all things equal, with almost 160 gallons of fuel.

Shortly after passing Malad City, Coolstone One called Hill Metro for Colorado Springs weather. Metro advised that the field was 4000 broken, 50 miles visibility plus, and was forecast to remain that way for the next several hours. This was pretty much the same weather as had been given the pilots at Spokane. The thought occurred to One that the weather Hill gave them did, in fact, sound identical to the one they initially received. One tried, but couldn't remember whether the sequences came in 15 after the hour, before the hour, or, was it on the half hour? But no sweat, no problem. With their groundspeed they would be at the Springs in less than an hour.

It was starting to get dark from the ground up, as it does when you're flying at altitude. Up ahead now, the pilots could see a lower deck beginning to develop. Almost a hundred miles out, Denver Center called, "Coolstone One from Denver Center. You are cleared for descent to Flight Level 240, pilot's discretion. What type of approach are you requesting at the Springs?"



Now Pete Field's instrument runway was closed for construction and had been for quite a while. The only instrument recovery available was an ILS to Runway 35, then circling to anything handy; or a surveillance approach to 30, which had become the primary runway during the construction period.

"Denver from Coolstone One. Request an enroute with surveillance to 30, and say Colorado Springs weather, please."

"Roger, Coolstone, stand by," answered Denver.

One eased back the power and began a gradual descent. Denver came back with the weather, "Four thousand broken, 50 miles vis, winds northwest at 12."

"Can't hardly beat that," One told Two. "Even the winds are right down the old slot." As an afterthought, and mostly to impress Two on his thoroughness, One asked Denver what Buckley was carrying.

"Roger," replied Denver, "Buckley has 100 obscured with a half mile in blowing snow."

"Roger," queried the Rock. "How about Pueblo?"

"Pueblo," answered the Center, "was carrying 200 overcast, 1 mile in snow showers on their last sequence."

"Man," sighed One to Two, "good thing the Springs is open. There's a lot of rotten weather around."

Two agreed.

They were cleared on down to 12 from 24, and at about 18 the little group entered the tops of the overcast. As they descended, Two commented that it was getting damned seldom between those breaks. In fact, it was solid . . . not break one.

At 12,000 they were handed off to Springs approach control radar, were turned downwind for 30, and descended to 8000. It was here One found that the speed brakes wouldn't open, and Two discovered that neither the oil pressure nor the fuel pressure instruments were working. They announced their discoveries at the same time. This caused a minute or two delay so cockpit communications could be reestablished at an understandable level.

"Peanut inverter," said Two. "No sweat."

"Unless you have your speed brakes in neutral," said One, "we just don't have any."

Fuel was about 150, which was no problem . . . but there were still no breaks in the cloud deck, which was beginning to really concern both pilots, even though they didn't discuss it.

One had a local problem. He was trying to get down to gear lowering speed and lose another 1000 feet. At the same time radar was turning them to a base and calling for an even lower altitude.

With the throttle at idle and the horn blowing, One decided to level for a moment, get the speed down, lower the gear, then get down where he was supposed to be.

Radar called, "Tombstone One . . . er . . . Coolstone One, that is, I have a special weather observation for you. The field is now 200 obscured, ½-mile in snow, and the winds are north 15 gusting to 25."

"What are minimums?" One yelled to Two.

"Four hundred and one," Two answered.

"Tombstone One, from Radar. Did you copy that weather?"

"Roger, Radar. And that's Coolstone One . . . not Tombstone."

"Tombstone . . . er . . . Coolstone One, I believe that is below your minimums, Sir, and turn now to 320 for your final approach."

At this point, One and Two had a highly technical discussion.

"Buckley is down," One announced.

"Pueblo is down," Two replied.

"We have 148 gallons of fuel left," breathed One.

"Looks like it's here or no place," whispered Two.

"Roger, Radar," said One.

"Tombstone One from Radar. Visibility is now reported to be lowering on the approach end of 30 to less than a half mile." Radar didn't want to tell them

how much less for fear of breaking their spirit altogether. "What are your intentions, Sir?"

"Radar, from Tombstone One. I intend to land."

The Controller's voice went up at least a half octave as he settled down to running as tight a final as he knew how.

"OK, Two, here's what we will do. I'll fly the final right down to minimums and you try to pick up the ground visually. You'll be able to see through the snow from the back better than I can from the front."

"Rog," said Two, not really convinced, and instinctively tightened his lap belt and harnesses. Then he involuntarily passed his hand along the right side of the armrest, feeling for a pin which wasn't there.

It was obvious there was a strong crosswind. The Controller had them almost 25 degrees into it, but had killed the wind information quickly as soon as he became convinced that Tombstone flight was really going to shoot the approach.

One finally got somewhere near final approach airspeed and let the aircraft right on down. "Minimums," stated One. "Do you see anything?"

"Negative," replied Two. "Let it down another couple of hundred feet."

The descent continued.

"Two hundred feet," announced One.

Two had his eyeballs lying flat on the canopy, but a one-dimensional blackboard with lots of snowflakes on it was all he could see. The esthetic qualities of the view didn't impress him one bit.

"You gotta let it down more, One. I can't see a thing."

Very carefully One eased it down. He had flown out of Pete for several years and was aware that the terrain was lower on the approach for 30 than at the runway, but he didn't have all that much faith in his altimeter.

"Two miles out," Radar was saying. The heading was steady which gave One some confidence that, if they ever did break out, this Cat had them lined up so they could land.

"Do you see the ground yet, Two? I'm reading 6100 feet and you know what that means."

"Not a thing." Then Two remembered something from his early T-bird days. Something he had never used, nor had ever needed to use. He remembered that the altimeter read 50 or 60 feet low with gear and flaps down on final. He couldn't remember exactly how much, but knew it read low.

"Let it on down," said Two. "Just ease it down." (Not able to explain to One why.)

Very, very reluctantly One pulled the power back, and very, very slowly he started down.

Two saw the ground, but it raised the hair on the back of his neck because the ground looked like he could reach out and touch it. At the same time, One saw an even 6000 feet on his altimeter. His adrenalin level, which was already critical, went clear out of sight.

"I've got the ground," boomed Two. "And what's that out there to the left?" Two big red balls of light had shown up about 20 degrees left of their nose.

"It's the runway!" shouted One triumphantly. "No sweat."

For the first time Two became aware of the God-awful noises on the interphone. He held his breath momentarily. The noise level reduced considerably, but it was still high.

One set it down nicely on the snow-covered runway, and, after a brief struggle for directional control, really anticlimactical now, completed the landing roll.

They pulled into the parking area, shut down, and just sat there for a minute trying to get pulse and respiration rates somewhere near normal.

Simultaneously, as they sat, without collusion of any kind, they both began a slow burn. By the time One and Two had arrived at Base Operations, it was a full grown conflagration and was presented promptly to the weather office.

"Tell me," fumed One to the forecaster.

"Yeah! Yeah!" goaded Two. "Tell him."

"Tell me," One continued, "I just landed out there on that runway. How do you go from 4000 broken, 50 miles, to whatever it is now, certainly less than 200 and a half, without an intermediate observation?"

"Yeah! Yeah! Tell him."

"I don't really know," said the forecaster. "We don't take the observations after 1800. It's the responsibility of the civilians then. But as far as I know, our radio is still working. Did you call?"

Having played this game for a good many years, One and Two knew they'd been had. With the fire intensity considerably down now, they left the weather office. One found a phone. He dialed and, after a moment, said, "Let me talk to the duty controller."

There was a moment's delay. Then he said, "This is Tombstone . . . er . . . Coolstone One and that was one helluva fine approach you ran out there. Thanks a lot."

The Controller was stunned. He had received many calls from pilots, but few like this one.

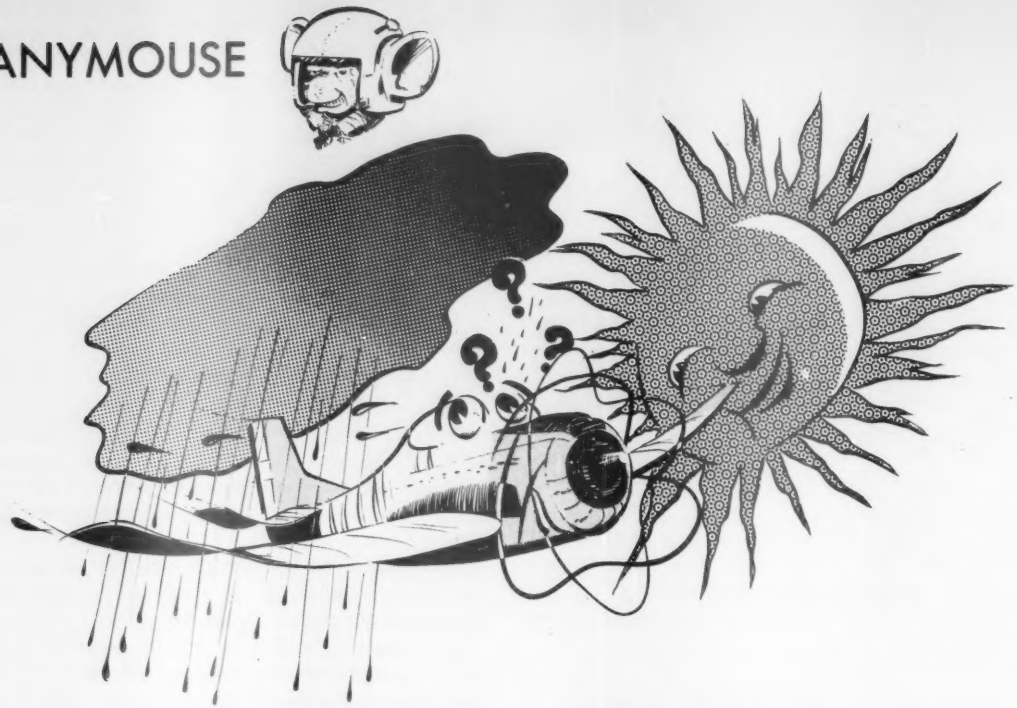
Courtesy *Interceptor*



When you think of it, common sense these days is not so common.

Ace L.

# ANYMOUSE





# Too Trusting, Too Early

AFTER filing a stopover IFR flight plan, the forecaster gave me the weather at my first stop (Barksdale AFB) and my destination (NAS Dallas). He informed me that my Dallas weather was less than 3000 and 3 and that I'd need an alternate. He predicted scattered conditions at Barksdale. Enroute to the AFB the clouds were scattered, and I was confident as to his prediction. About 45 miles out, however, the cloud coverage began to increase from scattered to variable broken and then to overcast. I switched to FSS and tried to get a report, but could not raise them. By this time I was on an enroute descent and in the clag at 5000 feet, terminating the flight with an *actual GCA at Barksdale*. After refueling, I punched back into the 900-foot overcast conditions and maintained VFR on top until the termination of my flight in Dallas.

The Dallas weather was *scattered with a high cirrus*. After landing, I brought my weather brief to the Dallas forecaster; and he confirmed my suspicion that my homebase weatherguesser had reversed the two forecasts by mistake. (I previously had rechecked the weather at Barksdale and also called Dallas autovon to get a firsthand report.)

I realize now that I should have done more to get enroute weather and refiled with FSS for an alternate, if necessary. I let the improving conditions enroute convince me that Barksdale was in good shape, even though from 45 or 50 miles out it was scattered, finally becoming overcast. I let myself get into a dangerous situation that was compounded by the fact that my actual IFR experience in the T-28 was limited. I think I have learned that it is *my* responsibility to check, recheck, and

The purpose of Anymouse (anonymous) Reports is to help prevent or overcome dangerous situations. They are submitted by Naval and Marine Corps aviation personnel who have had hazardous or unsafe aviation experiences. These reports need not be signed. Self-mailing forms for writing Anymouse Reports are available in readyrooms and line shacks. All reports are considered for appropriate action.

REPORT AN INCIDENT,
PREVENT AN ACCIDENT

doublecheck weather on deck and enroute to give myself the best available data to complete the mission safely.

T-28B Mouse

*That's the first I've heard of such a serious error on the part of a duty forecaster, and it was a dilly! Most of us tend to stretch the first leg of a cross-country, especially when there's no apparent weather problems. For that very reason we don't worry about fuel and hardly give an alternate a second thought. Things could get real sticky, real fast if your midpoint fueling stop was a long way from any suitable alternate and you were cheating just a little on the required fuel reserve.*

*When all is said and done, however, it is the pilot's responsibility to read, heed, and keep track of the weather, regardless of the errors in prediction.*

## You Bet Your Sweet ASE

I WAS lost – completely and utterly lost. I couldn't see one recognizable landmark or one distinguishing feature of any kind. I knew I was moving, yet I was completely without sensation. I wasn't numb or hurt; I just couldn't feel or hear anything. It was really eerie.

The light was indistinguishable. It wasn't daylight nor was it dark. I had the feeling of what it must be like on a dull, dreary, dripping day in the bayou. My heart was pounding and I became panic stricken.

I remember I was terrified and began to scream; then I woke up. My flight suit was soaked. I looked around sheepishly to see if the pilot on the right or the crewman in the back had seen my performance. I needn't have worried. They were both asleep.

**Flashback**

We three were the crew whose job it was to ferry an H-2 from the factory in Connecticut to Imperial Beach, California. We had conducted a thorough preflight of our bird, and after signing all documents, launched on our 26-hour flight.

As some naval aviators do, we flew 6-8 hours a day and then "lived it up" at each O-Club wherever we sent our RON message. We started each morning after a few hours sleep to cover a respectable distance before the next night's soiree.

On the third day we were tooling along with that reliable ASE (Automatic Stabilization Equipment) holding heading, altitude, and airspeed. My HAC said he was drowsy and asked me "to mind the store" while he read the map. Five minutes later I looked over and saw he was asleep with the map in his lap and still holding a pencil in his hand. I looked behind and saw the crewman curled up asleep on the deck.

**Monkey See, Monkey Do**

Have you ever dozed off in class or behind the wheel on a freeway and then suddenly become conscious – not knowing where you were? That's what happened to me. I dozed off too, and the helicopter, bless its sweet little ASE, kept us boring westward for 30 minutes – *all by itself!* When I awoke we were still on course and altitude.

However, I was so shook I woke up the other two. We stopped at the first military facility and rented a couple of rooms at the guest lodge.

Sleepymouse

*That trip could have been a real bummer. You not only bet* **your** *"sweet little," you had a couple* **more** *on the line. You almost learned the hard way that you can't hoot with the owls* **and** *fly with the eagles.*

# ThermoUNcoupled

TAKEOFF checklist completed, the plane commander of a P-3 announced over the ICS, "Here we go." Power was added smoothly and the big bird accelerated rapidly.

The copilot and flight engineer let their eyes scan across the battery of engine gages. Everything was normal. The takeoff was just like hundreds previous to this one. However, shortly after leaving the deck and establishing their climb, the No. 2 engine firewarning system activated.

In a case such as this, cockpit coordination and acts performed up front frequently mean the difference between routine operations and disaster. This crew had been down the same road so many times in simulation that the real thing was a piece of cake.

Quickly, together the three agreed on which engine was the bad actor. The flight engineer secured the No. 2 engine and discharged the HRD (high rate discharge). Momentarily the firewarning system deactivated but within 10 seconds came on again.

Visual inspection of the No. 2 engine by the PPC and flight engineer revealed nothing – no fire, no smoke. But the firewarning system indicated otherwise. The alternate HRD was discharged, and in 10-15 seconds the firewarning system again deactivated.

The pilot permitted the engine to cool for a while then began dumping fuel. When the aircraft weight was below 110,000 pounds, an uneventful three-engine landing was made.

Do you know what the troubleshooters found when they looked for the cause of the trouble? The No. 4 thermocouples were not installed on either the No. 1 or No. 2 engine. They were just rolling around loose in the nacelle area. The sleuths also found minor heat damage where a couple of small holes had burned into the access panel where the thermocouples *should* have been.

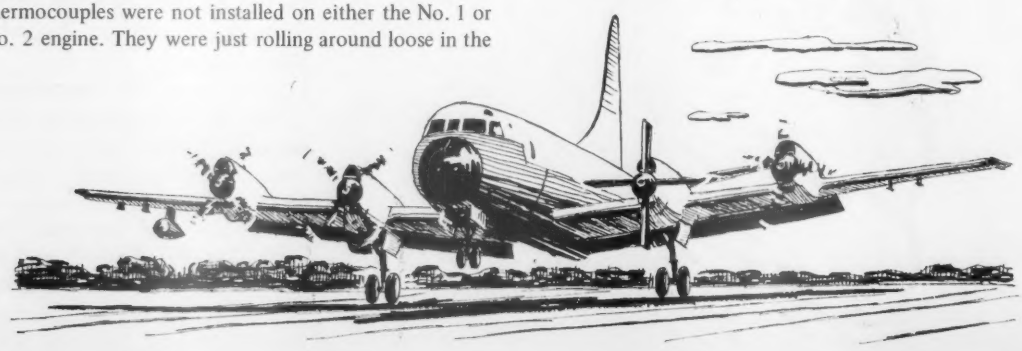
The problem had all begun two flights previous to the incident. At that time the plane had come out of a 91-day inspection. During the check, all thermocouples were removed and inspected. While Work Center 220 removed them, Work Center 110 did the borescoping. The No. 4 thermocouple was left out of the engines by both work centers. Each believed the other would reinstall them. Neither did.

Each work center inspected its work and had it signed off by collateral duty inspectors. It kind of makes you wonder what this unit's definition of quality assurance is. Risking an entire flight crew and aircraft to "let George do it" is too high a price.

What caused the breakdown in quality assurance procedures, and how do you go about preventing hairy situations like this in the future?

Quality assurance procedures do not, nor can they, attempt to go into such detail as to specify which work center will complete a job, when two centers are involved. So the burden is upon maintenance control to use good common sense, ensuring that the work is assigned to completion. QA must ensure that it is completed properly.

You might feel like snatching a CDI bald for something like this, but, practically, the CDI training program and the kind of supervision prevailing in the squadron must be questioned. ◄



# IS IT A BIRD?

IMAGINE yourself on a routine cross-country training flight in a UH-1H. You are cruising at 3500 feet, have flown for about an hour, and everything has gone smoothly. Suddenly you see three free-falling skydivers pass directly in front of you within one rotor disc. Is this a nightmare? – the result of too much anchovy and onion pizza? – overindulgence? No, it's a fact! It actually happened!

The above incident was documented in an Operational Hazard Report (OHR) recently received by USAAAVS. In this case, the participants were lucky. The results were only jangled nerves on the part of the persons involved. We hate to think what would have happened if they hadn't missed each other!

Skydiving is a growing sport in our country and worldwide. The United States Parachute Association, the nationally recognized spokesman for parachute enthusiasts, lists within its ranks 125 affiliated clubs, encompassing over 18,000 members. These 18,000 members accumulate 1½ to 2 million jumps per year. What is the likelihood of your unit having a near-miss with a skydiver? Are there any published drop zones in your local flying area? If you don't know, do you know where to find out?



Sport parachutists, like all other users of the airways, are governed by Federal Aviation Regulations. FAR, Part 105, pertains particularly to parachute jumping. Permanent drop zones, with operating altitudes and hours of use, are listed in Part 4 of the Airman's Information Manual and in Part IIB of the DOD FLIP. The drop zones are also depicted on sectional aeronautical charts (VFR sectional). According to FAR, Part 105, the pilots of jump planes are required to notify the nearest ATC facility or flight service station 5 minutes prior to the jumpers exiting the aircraft. This will be relayed to all known IFR traffic in the area.

Check the appropriate regulations to see if there are any drop zones in your area. Become familiar with their locations and operating hours. When flying in the vicinity of a published drop zone, contact your nearest ATC or FSS and ask if there is jumping in progress.

A little extra preflight planning can prevent a nerve-shattering near-miss – or worse.

USAAAVS *Weekly Summary*

*(We'll have more on parachute drop zones in a future issue of APPROACH. – Ed.)*

When the 1 MC system blares "flight quarters" and an AH-1J/UH-1N skid-equipped helicopter is approaching, are you prepared to handle it aboard ship? This article has been prepared by the officers and men of the Air Department of USS INCHON to help understand some of the special gear and techniques necessary for safe . . . .

# Skid Operations A

WITH the increased use of the H-1 series helicopters by the Marine Corps, personnel of amphibious ships need to become familiar with problems peculiar to operating skid-equipped helicopters. The problems to be discussed in this article were experienced during a recent Med deployment. The newest addition to the LPH family deployed with a deck load of 23 helicopters, including four AH-1Js and four UH-1Ns, which brought to light many problems. Problems were encountered in securing the helos for heavy seas and high winds, deck handling, rotor engagement and disengagement, and launching and recovering the aircraft.

High winds and heavy seas in the Mediterranean during the winter months were found to be the rule rather than the exception. Steady state winds of 50 knots with higher gusts were frequent during November-January, particularly in the areas of Corsica, Sardinia, the western coast of Italy, and the southern coast of France.

**Foul Weather**

Securing the H-1 helicopters for protection against high winds and heavy seas proved to be easier than securing H-46s and H-53s. Eight-point tiedowns were used on the H-1s and proved to be adequate for the conditions. Aircraft were spotted fore and aft, nose toward the ship's bow. Parked in this way, the only damage experienced was caused by the main rotor blades and was of two types. First, the main rotor blades flapped up and down from high, gusty winds and damaged the tail rotor drive shaft cover; second, the main rotor blades became unsecured and rotated into an adjacent helo.

Damage to the tail rotor drive shaft cover of other aircraft was prevented by placing a cushion or pillow between the aft end of the blade and the shaft cover and tying them securely to the tail pylon. When the aft blade was tied snuggly on the cushion, the forward blade was secured to a flight deck padeye or to the towbar eye on the skid. Another equally successful method was to rotate the main rotor blade about 30 degrees from the helo's centerline and tie down both blades to flight deck padeyes. In either case the tail rotor must be aligned with the tail rotor pylon and lashed securely to it. Securing the main rotor blade by either of these methods proved effective during those periods when the deck was rigged for heavy weather and flight operations were secured.

In normal conditions (winds up to 45 knots) the main rotor blades were susceptible to becoming unsecured because of the blade securing device currently in use. This device is a J-hook which fastens into a hole on the end of the blade. A strap fastened onto the J-hook is

The following officers and men of the Air Department of INCHON collaborated on this article:

CDR Edward W. Hille, USN
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WO1 John H. Starnes, USN
ABHC Sam Underwood, USN

# s Aboard the AMPHIBS

then secured around the tail portion of the fuselage. This J-hook will eventually pop out of its hole when the rotor blade is subjected to gusty winds or rotor wash from another helicopter. A recommendation was submitted by an embarked squadron to replace these J-hooks with snap-type fittings.

A heavy weather problem peculiar to the UH-1N was that of fuel spillage whenever the ship encountered rolls in excess of approximately 10 degrees. This spillage was the result of fuel from the tanks flowing overboard through the air vent lines as the helicopter tilted with the ship. The solution was to leave several inches of space at the top of the fuel tank for sloshing fuel. Since these helicopters must be gravity fueled, this solution proved to be simple and effective. The AH-1J can be completely topped off with fuel without danger of spillage because of a different vent system. It may also be pressure fueled – provided the special fuel hose nozzle is available.



### Deck Handling

Deck handling H-1 helicopters proved to be far more difficult than either the H-46 or H-53. The H-1 is moved by means of a set of handling wheels which attach to the landing skids at the approximate center of gravity position of the aircraft (under the main transmission). Each handling wheel is actually two wheels in tandem and attach to the skid by means of pins. The skid is carried between the tandem wheels.

There are two pins, a movable and a stationary pin, to connect the wheels to the skid. After the pins are in place, the load of the aircraft is transferred from the deck to the wheels by means of hydraulic pressure applied from a handpump on each handling wheel. This system proves satisfactory; however, misused, these wheels can easily cause injury to the man working the handpump.

To safeguard against injury, the wheels should be

carefully inspected prior to use. The movable pin must have a small safety pin installed to prevent it from sliding out of the skid as hydraulic pressure is applied. Experience has shown that wheels received in some cases lack safety pins or have safety pin holes drilled to incorrect tolerances. In one case, there were no holes for safety pins.

These discrepancies can be easily corrected once found. Unfortunately, the fact that they existed at all was brought to light only after one flight deck blue shirt was struck in the face while applying pressure to the wheel. The wheel slipped and hit him with enough force to render him unconscious, fracture his nose, and inflict facial abrasions and bruises. In addition to ensuring that safety pins are properly used, it is just as important to ensure that the wheel is fitted snugly to the skid or slippage may occur. For example, the skid fastening points of the AH-1J were discovered to be wider apart than the UH-1N; and a .060-inch washer had to be used as a shim on the fixed pin to ensure a snug fit when the wheels were mounted.

The handling wheels are also designed to include a handbrake. Apparently due to maintenance considerations, ease of handling, or for some other reason, the brakes are usually removed by shore-based squadrons. Thus it is rare to find a set of wheels with handbrakes in place and in proper working condition. This is an insignificant problem aboard ships having the capability to use tow tractors for aircraft movement; however, squadrons should include in their deployment packup wheels with handbrakes installed for use aboard ships that must move aircraft by hand.

Another initial handling problem occurred when using the standard Navy aircraft towbar for towing the H-1 helicopter. The towbars in use are normally configured with tow hooks on the inside face. Configured in this fashion they are perfect for towing the H-46 and H-53, but not the H-1. The H-1 towpoints are on the inside face of its landing skids. Attempting to tow these aircraft with the standard towbar may result in holes being punched into the skids by the corners of the towbars. For this reason it is recommended that several towbars be modified by removing and exchanging the hook ends. This places the hooks on the outside face.

With the handling wheels properly checked, shimmed,

and safety pinned, the modified towbar in place, and the aircraft ready to tow, some additional handling problems arise.

During heavy seas, with a rolling or pitching deck, one must always guard against the aircraft inadvertently sliding across the deck on its skids. When preparing to move the aircraft, the tow tractor should be in place and hooked up with the aircraft tiedown chains loosened sufficiently to allow the aircraft to be raised onto its wheels. Once the weight of the aircraft is on the wheels, the probability of skidding is greatly reduced; and the chains may then be removed.

Directional control during movement is provided by the tow tractor and a man stationed to walk the tail stinger. The tail stinger man has the additional responsibility of balancing the aircraft on its handling wheels during tow to prevent the skids or deck surface from being damaged. Movement must be very slow (about the speed of a slow walk), and it is recommended that chockmen be ready to chock the handling wheels should tractor brakes fail or towbars break. Great care must be taken when moving these aircraft in the vicinity of the deck edge. When the tail stinger man can no longer stay in position because of proximity to the deck edge, the aircraft may be balanced on its wheels from the front. This is dangerous since a man must ride on the towbar while clutching the nose of the aircraft. This should be avoided whenever possible. However, should the occasion arise where it becomes necessary, movement should be made *very* cautiously.

**Rotor Engagement and Disengagement**

Once the helicopter is spotted in its launch position, the next serious safety hazard is engaging the rotors. Rotor engagement wind limitations are an operational constraint in any helicopter operation. The H-1, due to its small size and design, can be much more of a hazard to flight deck personnel during rotor engagement than the H-46 or H-53. As a general rule, winds of 15 knots or more may cause extreme dipping of the rotor tip path plane during engagement. The degree of dip will increase with wind velocity and the speed of wind gusts.

The H-1 rotor begins turning as the first engine is started. Because the engine takes several seconds to come up to speed, the rotor will begin to turn slowly. Since there is little centrifugal force on the rotor, the blades may be forced up or down quite easily by wind gusts. To help solve this problem the rotor is hand held by a crewman, as long as possible, whenever wind velocity exceeds 15 knots. Thus the engine can be almost up to speed when the crewman releases the rotor blade. This provides for a much more rapid rotor engagement and is quite effective in winds up to 25 knots. However, above 25 knots the rotors may frequently dip to within 4 feet of the flight deck as they gain rotational velocity.

The general rule applicable to all helicopters of

always ensuring that personnel remain well outside the rotor arc or immediately adjacent to the helo during engagement and disengagement cannot be overemphasized when operating with H-1 helicopters. Particular attention should be paid to emphasizing this hazard to squadron personnel, as often they become complacent after spending months operating ashore in low wind conditions. Embarked Marine troops should also be made aware of this danger.

Disengagement of rotors can be just as hazardous as engagement because of slow rotor brake actuation on H-1 helicopters. The same precautions apply here as with rotor engagement.

The AH-1J has some unique differences from the rest of the H-1 helicopter family. Maximum wind for rotor engagement is only 30 knots instead of 45, which imposes significant limitations on AH-1J operations during high winds. Noteworthy also is the maximum tail wind velocity of 15 knots for both the AH-1J and UN-1N helicopters due to possible hot starts on the engines. Wind charts carried in current publications do not make note of this engine limitation. *(This problem is under study at NAVSAFECEN. – Ed.)*

### Launch and Recovery

The actual launching and recovery of H-1 aircraft is similar to other types of helicopters. The primary difference being that flight deck personnel must always be on guard against sliding of the aircraft on its skids. Pilots of course are the key to this problem. They must be thoroughly briefed on flight deck operations and the particular problems associated with taking off and landing on rolling and pitching decks under high gusty wind conditions. Tiedown chains should be removed expeditiously when launching, and chain runners should move as quickly as possible outside the rotor arc. They should be instructed to always enter and leave the main rotor arc from the front of the helicopter to avoid the extremely dangerous tail rotor and run in a low, crouched position until well clear of the rotors.



Recoveries, as launches, place the greatest burden of responsibility on the pilot. Once the aircraft is firmly on deck, tiedown chains should be put in place as rapidly as possible using the same precautions with respect to rotor arcs.

### Ordnance Precautions

Aside from the special wind limitation of the AH-1J, its basic mission as an aviation ordnance delivery vehicle creates a unique safety problem. Procedures for ordnance mission launches were set up in the following order: aircraft spotted for launch, ordnance loaded on aircraft, pilots preflight, engine start and rotor engagement, pilots takeoff checklist completed, remove aircraft tiedown chains, arm the ordnance, and launch the aircraft.

Procedures for recovery were as follows: helo lands (if hung ordnance onboard, special prelanding procedures were accomplished), guns and launchers dearmed (hung ordnance safetied), aircraft tiedown chains installed, engines and rotors stopped, ordnance downloaded, and aircraft moved or reloaded as appropriate. With low wind conditions and calm seas, the foregoing procedures were considered safe and efficient. They were designed to keep the smallest number of men near the ordnance when the aircraft was armed. The arming and dearming stages were inherently the most dangerous, as during those evolutions the pilot and gunner must keep their hands off the flight controls in full sight of the arming/dearming crew safety supervisor as a precaution against accidental triggering of the ordnance.

Thus with no one in control of the aircraft and no aircraft tiedown chains installed, as wind velocity and sea state increase, the danger of aircraft sliding into catwalks increases. During rough seas and high winds, it may be necessary to modify the foregoing sequence of procedures by placing tiedown chains on the aircraft immediately after landing and removing them just prior to launch. This would subject the chain runners to a greater hazard of an accidental firing. An alternative would be to permit the pilot to keep his hands on the aircraft controls during the arming and dearming phases; however, this would also subject the arming/dearming crew to the hazard of accidental firing. The final decision in either case must be based on the operational necessity of the particular mission.

### Summary

The UH-1N and AH-1J helicopters, with their versatile capabilities and their relative small size, are in many ways ideal for use aboard amphibious ships. The information set forth in this article offers a basic look at some of the problems which may arise when the first H-1 embarks on your ship. Remember, that despite its small size, in many ways an H-1 skid type helicopter presents a far greater hazard to personnel than the large, conventional-gear helicopters. ◄

Sometimes experience is the test *before* the lesson.
R. C. Rhinehart, Jr.

# Sludge The Magnificent

THE BIG Ben on the shelf clanged raucously. A sinewy hand stretched forth from under the neatly stenciled blanket to swipe at the plunger. H. Stanley Sludge, that magnificent hunk of physical fitness, stumbled from his bed.

After a splash of cold water and a shave, a bowl of wheaties, a cigarette, and two cups of coffee, he was ready to hurl himself into the work of the day. As he lurched outside, he cursed his wife softly for parking the car so far back in the driveway, and resigned himself to the long hike. He eased himself behind the fully-serviced controls of the Belchfire 8, and the motor roared at his touch.

Minutes later, he was at the hangar, again cursing the fates that had caused all the good parking spots to disappear. It appeared he would have to walk an agonizing 25 yards to work.

And then there were the stairs. Don't forget the stairs. Why don't they get smart and install escalators like they have on the big carriers?

The pilot's meeting lasted 45 minutes and three cups of coffee, but Stan was careful to find a seat at the acey-deucy table so he wouldn't have to get up and move after dismissal. The morning passed profitably (4 wins, 1 loss) and Stan lassoed a donut and a coke prior to the afternoon hop. He had a good copilot, so he wouldn't have to bother with that preflight, climbing all the way up to that cotton-picking rotor head. Getting to the cockpit was bad enough.



At secure, he accompanied a group of hail fellows to the club and worked out with the dice for awhile. His appetite twitted, he again turned up his power-steered, power-braked monster and turned it toward home. It was getting dark, and he was glad he had that automatic headlight dimmer. It made driving so much easier.

It being Tuesday, he decided to have dinner in the living room so he could watch Huckleberry Hound. His wife, the fair and dutiful Brunhilde, served it on a TV tray, along with a frosty stein. So it was just about natural for Stan to catch a catnap after his favorite show.

Some hours, and a bedtime snack hence, he repaired to the bathroom. He stepped on the scales. 209! He hadn't gained or lost a pound since he had played college football. He admired his physique in the bathroom mirror, ignoring the jowls at his waistline and the loose flesh where the biceps had once been.

What a build! "SLUDGE THE MAGNIFICENT!!!"

MAG-26 *Safety Raiser*

# Happiness Is A Beautiful Radar Picture

Submitted by D. A. Behnke, ASO, VQ-3

"SPECS For Pilots" in the Letters section of the January 1972 APPROACH, mentioned a particular aviator's dependence on glasses. The pilot realized only too well that being without his aids-to-vision would be like flying blind through a front without radar.

During a recent deployment, a situation arose which illustrated the importance of being able to see in another way. The weather briefing for the night flight from SOWEST AFB to NAS NOWEST forecast no thunderstorms along our route.

It was to be a moonless night flight, and the radar was still inoperative at the time the flight plan was dropped on the line. The decision was made to delay departure until all repair possibilities were exhausted on the radar system. Metro had received no recent reports on the weather along our track, but at this particular time of the year it is not improbable that many severe buildups might exist without their knowledge.

As a direct result of perseverance by crewmembers in troubleshooting the system and obtaining necessary components from the Air Force, repair of the radar was finally effected about 30 minutes after scheduled takeoff time.

Approximately 1 hour after departure an extensive (to put it mildly) weather system was depicted in living color on the radar scope along our course. The aircraft had to deviate some 50 miles right and parallel course for 150 miles in order to avoid severe turbulence. Blinding lightning confirmed the area and altitude to which this system extended. It can be assumed that without an operable radar (which was tweaked up beautifully) the aircraft would not have been able to safely negotiate a path to destination and most definitely would have had to turn back.

This incident clearly illustrates the importance of a crew operating as a team. The pilot and navigator would have been severely handicapped in their ability to traverse a safe flight path without the commendable efforts of avionics technicians aboard the aircraft.

Pilots and navigators must have a healthy respect for the hazards of thunderstorms and accept nothing less than a properly functioning radar system when penetrating weather. If unpredicted weather is encountered which would preclude safe visual penetration without a functional radar, don't hesitate to invoke the "180 rule" while obtaining clearance to return to Homebase or suitable alternate if practical. In addition, if radar control is available, request weather vectoring assistance. Do not assume that such assistance will be automatically rendered. *(The avoidance rule [180 if necessary] is essential in known thunderstorm conditions. Maintain altitude well above or below the freezing level and avoid radar echos by at least 20 miles on either side of flight path. – Ed.)* ◄

FROM NO MATTER WHERE . . .

# Have You 'Learned To Return?'

By LT Dick Ritz

"MAYDAY – MAYDAY – MAYDAY" is a sound that sends a chill up the spine of any aviator. "I have lost (or am in danger of losing) my aircraft – help me!"

The man calling for help is about to begin an experience in personal survival. His "mayday" has set into operation a highly trained and well-equipped organization – the SAR (Search and Rescue) Task Force – but prompt and safe recovery is by no means assured.

Injured or not, whether the downed airman succeeds in being rescued or dies in a remote corner of the globe will depend on many factors . . . are there rescue forces available . . . are enemy forces nearby . . . does the man have the means to survive . . . and, above all, has he been trained to help himself to be rescued? Has he "learned to return?" He is the unknown factor in the SAR effort; the success of the mission will depend largely upon how well he plays his role as "rescuee."



The role of the aviator in effecting his own rescue changes, and will continue to change, as aircraft and rescue equipment become more and more sophisticated. Preparing the aviator for "going in" unexpectedly has always been a primary concern in aircrew training.

Originally, because rescue techniques were primitive and survival in an unfamiliar environment was often a long-term process, the type of survival training synonymous with "living off the land" was emphasized. Downed fliers in World War II found these concepts useful when called upon to evade many miles through enemy-held territory or to drift at sea for days or weeks before reaching friendly control. SAR concepts using the helicopter were marginally developed during the Korean War but, even then, only a small percentage of downed aircrewmen were promptly recovered; long-term survival was still of major significance.

The war in Southeast Asia has given strong impetus to rapid development of more advanced rescue equipment and techniques. Long-term survival and evasion concepts diminished in importance as survivors spent less and less time on the ground before recovery. A study of U.S. Armed Forces survivor recovery times for a 6-year period beginning 1 July 1964 reveals the following:

WORLD-WIDE (NON-COMBAT)

| PERCENTAGE OF TOTAL DOWNED AIRMEN | RECOVERY |
|---|---|
| 84% | Within 1 Hour |
| 10% | Within 4 Hours |
| 5% | Within 24 Hours |
| 1% | Over 24 Hours |

SOUTHEAST ASIA (COMBAT)

| PERCENTAGE OF TOTAL DOWNED AIRMEN | RECOVERY TIME |
|---|---|
| 36% | Within 30 Minutes |
| 22% | Within 1 Hour |
| 27% | Within 6 Hours |
| 12% | Within 24 Hours |
| 3% | Over 24 Hours |

Additionally, because of the shortened recovery times, survivor reports from Southeast Asia combat losses for the same time frame (July 1964 to July 1970) showed that:

a. No fires were made.
b. No foraging for food was attempted.
c. No shelters were constructed.

The probability of a downed airman applying long-term survival training concepts, even under noncombat conditions, continued to decrease.

The Navy introduced short-term survival/rescue training concepts to its personnel at FASOTRAGRUPAC (formerly FAETUPAC) with the implementation of DWEST (Deep Water Environmental Survival Training) in November 1966. Each service had established individual SAR concepts and was teaching familiarity with its own vehicles, signal and rescue

**Like dreams, many flights start out on wings only to return home on sore feet.**

*Anon*

devices, and SAR procedures.

When the interservice global SAR concept was established, geographically-designated areas of rescue responsibility were assigned each service. The Air Force was given primary responsibility for all over-land and coastal water rescues outside the United States. Throughout Vietnam, however, the Army had at one time upwards of 1100 helicopters, including rescue vehicles. The Navy's primary area of rescue responsibility was the open sea, yet there were times when its mission was expanded to include land pickups. In short, due to the diversification of rescue resources, the downed aviator could never be sure who would rescue him. Familiarization with the rescue vehicles, equipment, and procedures of all services became an important aspect of SAR training.

Keeping SAR/survival training up-to-date, offering the aviator the best chance of fulfilling his mission, continues to be of major concern to aviation training commands. FASOTRAGRUPAC, for example, servicing the Seventh Fleet, incorporated interservice SAR/survival concepts at its JEST (Jungle

Environmental Survival Training) school in August 1968. Information is updated on in-country fact-finding trips, visits to other service commands, and at quarterly interservice SAR seminars. This information is forwarded to the Survival Training Department at North Island for inclusion in DWEST and field survival curricula.

Research and development of new rescue devices for universal use is an important part of the mission. Presently, the Command is assisting in the development of a two-part interservice SAR training film which will be disseminated to all arms of the aviation community. It will depict various rescue devices, vehicles, and procedures employed by recovery teams operating on land and at sea.

Testimony to the effectiveness of FASOTRAGRUPAC's training programs is given by over 50 "satisfied customers," members of JEST's exclusive "Learned and Returned Club." These men were rescued from the rice paddies and jungles of Southeast Asia and offer living proof of the value of their SAR training. *(See inside back cover, August 1971 APPROACH. – Ed.)*

Each military service throughout the Department of Defense has dedicated itself to supplying the aviator with the best SAR/survival training and equipment available. Yet, unpreparedness continues to be a major cause of survival failure. Often the airman fails to prepare himself mentally and materially for every contingency. Each flight plan, made under combat or noncombat conditions, should include a contingency plan for survival.

The airman should know the terrain over which he will be flying and should be prepared for any survival eventuality (e.g., forced landings in hostile/nonhostile environments, over water or in remote areas where weather conditions may be extreme, specific procedures in injury/noninjury situations, etc.). He must know where his survival equipment is stowed and how to use it properly. Most importantly, he must check his equipment frequently to ensure it is in good operating condition. Often, what a man carries in his seatpan and what he does with it spells the difference between life and death. Finally, he must take the responsibility for his own familiarization with various rescue equipment and procedures utilized by each service.

An aviator can expect to find himself in a survival situation about once in 5 lifetimes. The odds are in his favor, but the smart airman never assumes safety or survival. Survival is a personal thing, and a downed aircrewman often learns the hard way the value of self-preparation. He knows he is a highly trained technician in his aircraft and not a professional rescuee. He also knows his mission is not completed until he brings himself back – alive! In the final analysis, this will be his responsibility.

*What about you – have* **you** *learned to return?*

*SERE Today*



## Sir, we
### just dropped
#### a sonobuoy

THE CREW of a patrol aircraft had completed an ASW training exercise and the pilot commenced a return climb toward Homeplate. The plane commander initiated a call on the ICS to the after-station to ascertain the status of stores security. The aft observer had taken off his headset to help the ordnanceman and was not on the circuit.

The crew ordnanceman had unloaded all ordnance except one sonobuoy which became jammed in the chute. The aft observer, while rendering assistance, inadvertently hit the manual release lever with his arm causing ejection of the sonobuoy over land.

Fortunately, the sonobuoy did not injure anyone or cause any property damage when it plummeted to the ground.

The primary causal factor in this incident was poor crew coordination. The pilot should not have crossed the coastline without word from the aft observer, and the ordnanceman should have followed standard safety procedures to retrieve the sonobuoy. Sonobuoy ejection could have been prevented if the ordnanceman had used the sonobuoy manual override lock pin, closed the sonobuoy door, or bled air pressure from the sonobuoy manifold when he began unloading the chute.

# SOCIAL SUBTERFUGE

AN Air Force pilot recently remarked that "Social drinking is to the Navy as acute alcoholism is to the Air Force." Surely this is a grossly prejudiced overstatement . . . or is it? How many times have you heard the familiar OPNAV rule misquoted, "No smoking 12 hours prior to flight and no drinking within 50 feet of the aircraft?" Of course the intent of such is harmless levity, but does it not reflect the frivolous manner in which many flight crewmembers regard the inherent hazards of alcohol?

It's no small wonder the naval aviation community hasn't set any records for abstinence. A great part of our social structure revolves around the club with its endless round of happy hours (attendance is mandatory in some squadrons). Along with the finest flight training in the world comes indoctrination into a social order whose constitution is often predicated on rules made over the club bar.

Don't get me wrong, man. I consider it a rare privilege to belong to our great fraternity. It's just that at times I think we place too much social value on alcohol.

For one, this aviator had been keeping up with his buddies round for round during 8 years of happy hours, squadron parties, etc. – a true hacker in every sense of the word. But it suddenly occurred to me recently that the cumulative effects of these frequent libations might soon foul a couple of my sparkplugs, and that it might prove beneficial to turn off the faucet.

Easier said than done, and I couldn't have picked a worse time to start. A formidable array of obstacles were spread out before me. The skipper's packing out/drink-up-the-booze party would ordinarily have been insurmountable, but fortunately I was scheduled for the alert. Now all I had to do was get past a whirlwind of parties associated with a friend's wedding – topped off by a stag party and the reception – unfriendly territory for "nonhackers."

Realizing the awesome social pressures preventing a person in my position from quitting gracefully, it became evident that a concentrated plan of attack was necessary. (It isn't cricket to merely state that you've stopped drinking due to the lousy after effects, i.e., waking up with a headache, bloodshot eyes, miserable disposition, and a short-circuited brain for half a day. No one will buy that.)

In execution of Operation NA (no alcohol) a little subterfuge would be necessary during the upcoming

social events. This would entail use of every devious means at my disposal so as not to tip off my peers that I was now an out-and-out teetotaller.

I would pour my own cokes and throw in a slice of lemon for effect. Orange juice on the rocks with a side of swizzle stick aroused little curiosity. But the coup de grace was a pseudo-Bloody Mary which consisted of tomato juice on ice with all the goodies sans vodka. The plan was a complete success save for one careless incident when I was caught slipping ginger ale into my champagne glass at the wedding reception.

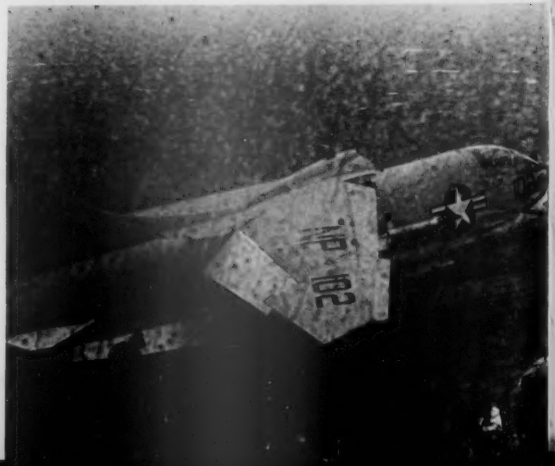
What did I gain by carrying out this ruse? Aside from gaining assurance that I had no physical dependence on alcohol, and the knowledge that social life can be just as pleasant without it, a few other benefits were realized.

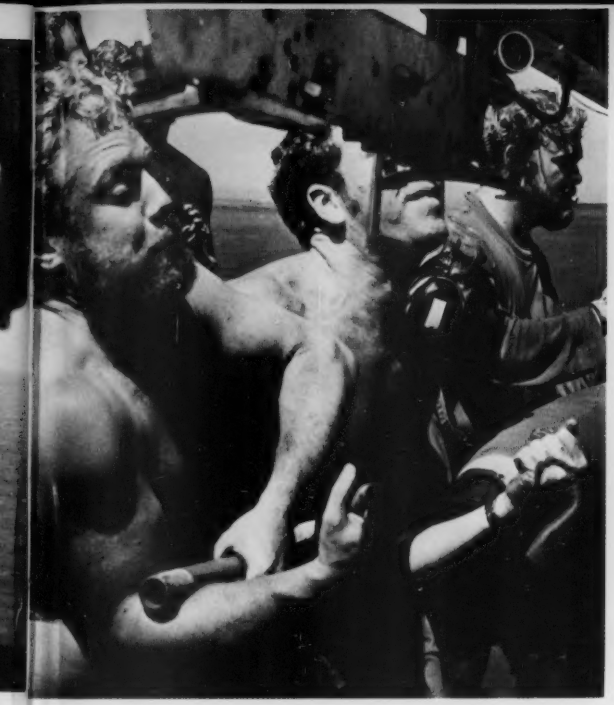
Once the intake of all those useless calories was abated, that unwanted extra layer of fat began to disappear. But, above all else, the comforting feeling that I was no longer causing irreparable damage to my body and mind made it more than worthwhile.

Wagonmouster

# Deployment Bound

Submitted by LCDR M. J. Bartolomei, VP-8, ASO





AS deployment approaches, the reaction of the various squadron personnel vary from unrestrained glee to sober apprehension. The "Skipper" is excited and enthusiastic, this is the culmination of many months of work and training. It's the goal he's been striving for, the chance to take his squadron out of a training environment and demonstrate real professionalism.

The "young tigers" are ready. They have visions of exciting operations, new places to see, new things to do, and above all, plenty of flight time. The safety officer has mixed feelings. He is still enough of a tiger to be excited by the prospects of new and different operations and places, but his knowledge of past deployments is enough to cool his enthusiasm and sober his thoughts.

Standing at the bar during happy hour, he reflects on what the deployment holds in store for his squadron. In spite of the exciting and unusual operations, the new places and activities, it is nonetheless cause for many sobering thoughts. He knows that on deployment the tempo of operations is greatly accelerated, the squadron's commitments are greater, and there is increased pressure on the individual. He remembers the alert launches and the last minute schedule changes. Rush, rush, hurry, get that launch off on time. Every minute seems to count. Continuous 'round the clock operations, changes in daily habits, fatigue.

Where does all this lead? All too often the result is a shortcutting of safe, proven procedures, a tendency to become complacent because, "We've been doing this for days and everything is going great." The slowly greying, not so young tiger also sees occasionally poorer support facilities than stateside, crowded hangar and parking facilities, the inexperience of the young sailors whose shoulders must bear so much of the increased pressure. He sees the cases of "channel fever," the overwhelming desire to get to the good liberty, to get home, the tendency to take an aircraft that isn't quite ready.



Then, in a flash of optimism, he thinks, "It can't be as bad as all that." As he looks at his buddies, he remembers the routine stateside operations and suddenly has the answer . . . Somehow, he must remind them that they must use the same good judgment, the same complete, proven maintenance procedures, the same thorough preparations that they normally use.

He must keep reminding them that shortcuts and complacency have no place in a professional outfit. He can almost smile now because he knows that no matter what the mission is, what urgency is associated with it, and what the tempo of operations may be, his is a squadron of professional aviators. They will apply that all-important professional attitude to any task, regardless of how minor, and each will help the other over the rough spots.

He knows that with the backing of the skipper and ops boss, each task can be approached in a safe, reasonable, professional manner. His grin becomes a smile as he thinks of the excitement and rewards the months ahead will bring. ◄

# How It Was

PILOTS and crewmen who have ejected often write survival and rescue narratives which should be shared with the rest of the aviation community. Here's the story of an ejection from 2000 feet:

"I would like to state," the pilot begins, "that the rescue in which I was involved was highly satisfactory. Any suggestions, comments, or criticisms which I have are stated solely in the interest of improving water rescue procedures in the future.

"I entered the water with my LPA-1 inflated. My seat pan was still attached. I had taken my oxygen mask off during parachute descent, but it was still attached. On water entry I released my chute. Due to light wind conditions, the chute drifted only a few yards past.

"As I floated in the water, I was surprised at my body position in the LPA-1; I felt as if I was sitting in a lounge chair. I also felt quite immobile. As I bobbed in the water I noticed for the first time there were a large number of shroudlines lying around me – mostly around my legs. Remembering the troubles that other aviators have had with shroudline entanglement, I made getting rid of them my first priority.

"I thought I could sweep the lines away but couldn't tell if any had wrapped completely around my legs. I decided to cut the lines with my shroudcutter, trying not to move around too much.

"Within a very short time I had cleared myself of all shroudlines. As I looked up, I saw the helo approaching. When it was within half a mile, I saw I still had my seatpan fully attached. I pulled my manual kit release handle which dumped the seatpan.

"Shortly afterwards, I saw the helo begin to close in. At this point my chute began to pull me backwards rapidly. A riser was somehow strung across my neck. The helo crew saw the problem and backed off. I simply ducked beneath the riser and seemed to be free of the chute. At this time I noticed that my raft had inflated itself.

"The helo moved back in and put a swimmer into the water. As he approached, I told him I was in good shape and that I thought I was clear of my chute. He signaled the helo to come back in.

"Although the water was only 58 degrees with very little wind, I was extremely cold. I knew much of it was due to a slight case of shock.

"The helo crew lowered the collar and hook. The swimmer was showing signs of inexperience – I guess mostly because he was as nervous as I. He had trouble locating my hoist ring. I pointed it out to him and he connected me. He then connected himself but somehow slipped off.

"The helo began to lift me then put me back in the water. I was unaware of any problem but noticed the swimmer fishing around for something. Finally I asked what the trouble was, and he informed me that I was still connected to my seatpan which was tangled in the chute. I disconnected my seatpan.

"Once more I started up but again was let back down. I was still connected to the seat by my oxygen hose. I disconnected the oxygen hose and was then hoisted. After I was assisted into the helo, the swimmer was brought aboard.

"Aboard the helo I was asked if I was all right. I replied 'yes.' This message was passed to the ship. The helo then remained on plane guard station for approximately 10 minutes.

"I do have a few comments I'd like to make:

- The crewman, although inexperienced and nervous, did a good job but was not familiar with my gear.
- A crewman should communicate with the survivor – especially when a problem arises.
- I was surprised at the ship's decision to leave me on station in the helo. Although in my case it seemed to be no problem, they still took the word of a pilot under stress or in shock. Maybe this is all right, but a person in any degree of shock is in a dangerous situation, and I believe anyone who has ejected is in *some* degree of shock. *(From both a common sense and medical standpoint, a decision to delay recovery of an aircrewman who has just ejected is unwarranted in all but the most exceptional cases. You should not rely on an individual to determine his condition after such an experience. – Ed.)*

"I would just like to say that overall the rescue was very professional," the pilot concludes. "It made me proud to be a naval aviator." ◄

## Pitch Black Night

ON a pitch black night with no visible horizon, a pilot who had ejected floated more than an hour in 6-foot swells before being rescued.

For reasons unknown, his LR-1 liferaft failed to inflate during parachute descent. In the water he could not find the lanyard to the $CO_2$ container or the oral inflation tube. His Mk-3C life preserver and the buoyancy of his seatpan kept him afloat.

Once, he located the $CO_2$ bottle but did not actuate it.

After a half-hour in the water, his life preserver began to leak. From then on he had to blow it up every 5 to 10 minutes.



After the rescue, the life preserver was blown up fully. It didn't leak at all over a 3-day period.

Squadron investigators theorized that while the pilot was in the water, the locking sleeves on the oral inflation tubes backed off. The valves pushed against his body letting the $CO_2$ out. The pilot didn't remember using the locking sleeves in the water. Investigators suspect they might have been loose from the beginning.

If, after orally topping off the life preserver, the pilot had locked the valves closed, he probably wouldn't have had any more problems with his flotation gear.

He had still more troubles with his survival equipment, however – all related to his lack of know-how.

While he was waiting for rescue, he lost his survival radio. He had not secured it to his vest.

He told investigators later that he had not been prepared to use his survival gear in a night situation and that he was not completely familiar with the arrangement of the seatpan. *A blindfold check of the seatpan would have gone a long way in showing what he didn't know in time for him to learn before an emergency.*

Endorsers to the accident investigation report emphasized the necessity for aggressive survival training programs.

"An aggressive survival program includes the practical use of all survival equipment, as appropriate, at frequent intervals," one endorser wrote. "Survival briefs are generally inadequate to (achieve) the proficiency required in the operation of survival equipment."

"Survival training as well as survival equipment reviews of what is contained, how it operates, and where it is located must be a continuing program," another endorser stated.

"Sporadic briefs at random intervals have no part in what should be an aggressive survival program. Survival on a pitch black night demands great familiarity with survival equipment."

## Semantics of Ejection

"WHY not call the seatpan ejection handle the primary handle for training purposes?" a flight surgeon asks. "Then aviators and crewmen would associate immediate ejection attempts with this method of initiation."

The accident which led to this question involved a TA-4F. We'll skip what made it necessary for the crew to eject and go to the ejection itself.

The pilot's decision was made at 300 feet and 60 degrees nose-up at less than 100 KIAS. Because he had both hands on the stick to keep it pushed as far forward as possible, he could not communicate to the crewman either the nature of the emergency or his decision to eject. Holding forward pressure on the stick with his right hand, he pulled the face curtain with his left.

At the time, the crewman was busy writing down engine instrument readings during takeoff and climb. He looked up, had a fleeting impression of a high nose-up attitude, and then saw the canopy jettison as the ejection sequence began. Seconds later, he was hanging in his parachute – his pencil still in hand.

But back to the flight surgeon . . .

"NATOPS and ejection training procedures are quite clear as to the use of the so-called 'alternate' handle for immediate ejection in low-altitude/low-airspeed emergencies," he writes. "In retrospect, the pilot stated that he never even thought of using the 'alternate' ejection handle.

"I recommend that the so-called 'alternate' firing handle for the ejection seat be emphasized as the *primary* means of initiating ejection in low-altitude/low-airspeed situations. In view of the relatively increasing frequency of this type of emergency, I recommend that the seatpan handle be called the 'primary' handle for training purposes so that aviators will associate immediate ejection attempts with this method of

initiation."

We at the Safety Center think this is a matter of training rather than a matter of semantics. We think there should be no designation "primary" and "secondary." We're for teaching the advantages and disadvantages of each initiation method so the crewman can make the best decision in his particular set of circumstances.

Nomenclature for the means of initiating ejection should be standardized. This subject was a CNATRA-sponsored agenda item at the recent Type Commanders' Conference. CNATRA recommended that:

- All NATOPS flight manuals, technical publications, and instructional material concerning ejection systems be changed to reflect standardized nomenclature.
- Nomenclature for the ejection-initiating handle located on the seat between the pilot's legs be standardized as "lower ejection handle" signifying lower position, for use in low altitude/low airspeed ejection.
- Physiology training units train crewmen in the ejection seat trainers by initiating ejection with the lower ejection handle.

In general discussion at the conference, it was agreed that there is a need for standardization of nomenclature for ejection systems. Since many different types of ejection equipment are presently used with various means of actuation of the sequence, it was suggested that across-the-board changes should be handled through the Naval Tactical Doctrine Activity as NATOPS manuals are reprinted.

This conference item was assigned to the CNO (OP-05F) representative for standardization action and for implementation through NAVTACDOCACT.

You'll probably be reading more on this in Safety Center publications in the near future.

### Whatchamacallit

WHAT is it?

What's that little unlabeled, unidentifiable item in your SRU-31/P survival kit? The one that's deep red, enclosed in two layers of sealed plastic, and looks like a piece of folded-up porous cloth.

It's tinder – a sawdust-type firestarter for use with the permanent match or flint stick in your survival kit when you want to start a fire.

Don't throw it away!

### Sinus Block

FLYING with a headcold can lead to a painful, sometimes incapacitating sinus block in flight. Here's an example from Air Force message traffic:

A pilot reported for a mission with a cold which he did not consider bad enough for him to cancel the flight. During climb and while working for 4 hours above 9500 MSL, no sweat. On completion of the mission, he was cleared to descend from 10,500 feet to 5500 feet enroute to base. Rate of descent was 3000 feet per minute.

Passing 6000 feet, he had a sharp pain in his forehead. He valsalved without relief. Climbing back to 8500 feet, he found there was no decrease in pain severity. His vision began to be affected. He established a 300 feet-per-minute descent and declared an emergency. He made an uneventful landing.

An ambulance met the aircraft. Prompt medical treatment relieved the pilot's sinus block; however, pain persisted for several hours. He was grounded for 5 days.

"This incident demonstrates the serious consequences of flying with known physical problems," the Air Force message states. "All crewmembers will be briefed on this incident and on their responsibility to seek prompt medical treatment for even seemingly minor complaints."

There's a message here for Navy aircrewmen, too. ◄

"What do you think of a fire hydrant marker 10' 2" hign?
"Great, can't miss it."
"We didn't."

From "Flight Comment"

# PHANTOM PHLUB

CARRIER operations are possible because a great number of people work in close cooperation, using split-second timing, to effect safe launch and recovery of aircraft. Essential ingredients are training, teamwork, self-discipline, and standard operating procedures. The following accident serves as an example of the confusion and trouble which can result when these ingredients are missing.

### The Accident

Following a routine CAP mission, an F-4J checked in at marshal for a night recovery. The departure from marshal and the approach were normal.

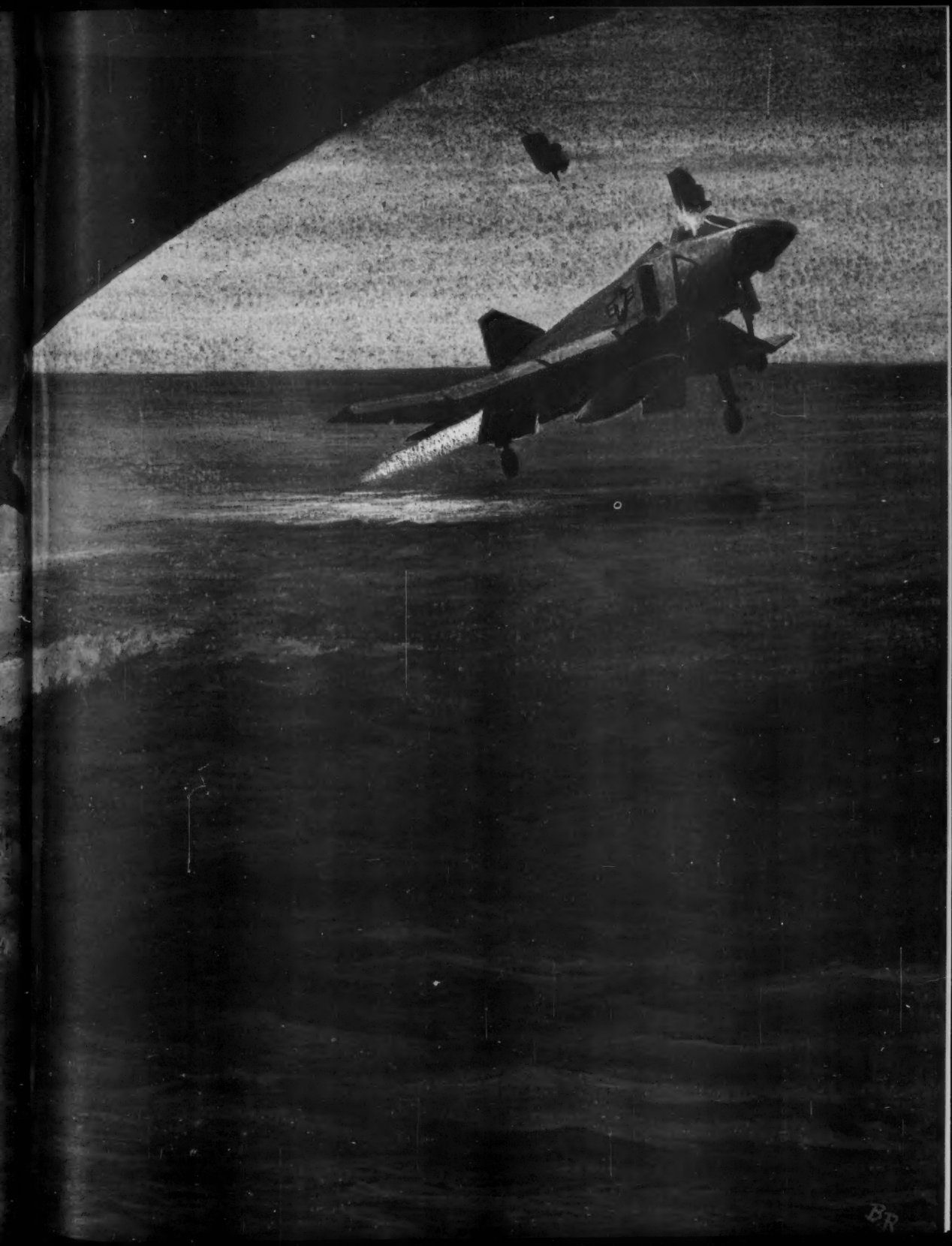
The pilot received word from CATCC that his max allowable gross weight for trap would be 37,500 lbs. At 3/4 of a mile the RIO, as directed by the pilot, called the ball stating "Three eight," meaning fuel state 3800 lbs. Pri-Fly *erroneously* interpreted this transmission to mean 38,000 lbs gross weight. This would put the aircraft over the maximum allowable gross weight for landing, so the aircraft was waved off.



CATCC cleared the *Phantom* to 1200 feet and to turn downwind. The pilot advised that his state was 3.8 and that he was approaching bingo. He then reported the 180-degree position with a fuel state of 3.7 (approximately 300 lbs over bingo fuel). CATCC cleared him to descend to 600 feet, but he reported that he was already there.

CATCC next observed an aircraft on radar, passing through the 45-degree position, approaching final bearing. CATCC asked the *Phantom* if he was continuing downwind. The pilot reported negative and advised that he was taking interval on another F-4 then on final. (Note: This F-4 was subsequently waved off.)

Having received this information and now observing the *Phantom* on radar, the final controller advised the CATCC supervisor, "He's coming around VFR." The 1JG phone talker, upon hearing this, erroneously assumed that the *Phantom* would be on UHF Channel 15 (the normal VFR tower land/launch frequency). ***The talker passed the (erroneous) word to paddles and Pri-Fly that "The next aircraft is on Channel 15."*** The LSO acknowledged and switched frequencies. Primary



In response to the waveoff lights, the pilot advised over the radio that he had a "state of 3.5 . . . and don't sweat it." *He continued the approach.*

also acknowledged.

The 1JG phone talker was then advised by the CATCC final controller that the *Phantom* had not changed frequencies but was still on CATCC frequency. The 1JG talker passed a correction to the LSO and Pri-Fly; but it was not received (heard) by the LSO talker, probably because of noise from an aircraft then being waved off.

By this time the LSO's radio had been switched to Channel 15. He twice attempted radio contact with the *Phantom* but without success.

Both the "mirror" (Fresnel lens) and arresting gear were set for an A-6 (which was the next aircraft regularly scheduled to be recovered). Therefore, a fouled deck was established and an attempt was made to reset the mirror and arresting gear for the F-4. However, the LSO observed the *Phantom* going low and, knowing that the mirror and arresting gear were still set for an A-6, gave the *Phantom* a waveoff with the mirror waveoff lights. In response to the waveoff lights, the pilot advised over the radio that he had a "state of 3.5 . . . and don't sweat it." *He continued the approach.*



The LSO then issued the first of seven "wave-it-off" radio transmissions, each becoming more frantic. Unfortunately, the LSO was on Channel 15 and the aircraft was on Channel 18. Pri-Fly was monitoring both channels. They were receiving the LSO's transmissions and had no reason to suspect that the aircraft was not also receiving them. Thus, Pri-Fly did not attempt to transmit a waveoff.

The *Phantom* continued the approach to touchdown. This took a total of *8 seconds, during which time the mirror waveoff lights were flashing continuously.* Upon touchdown, the tailhook hit the round down about 4 feet below flight deck level. The aircraft rolled up the flight deck over the arresting wires with low power. The LSO, primary, and several witnesses all had the impression that the aircraft was at idle power or that the engines were "unwinding." Pri-Fly called for power on Channel 18 three times and, as the aircraft went off the angle deck, called for the crew to eject.

The RIO had already made the decision to eject as the aircraft rolled up the deck . . . when he did not hear the power coming on. Both he and the pilot heard the power call from Pri-Fly, but neither heard the instructions to eject. After the aircraft went off the angle and prior to reaching a point abeam the bow at an altitude somewhat lower than flight deck level, both engine afterburners lit. Simultaneously the RIO ejected, followed by the pilot. The ejections were successful and neither crewman was injured. The aircraft climbed momentarily after the ejections, then nosed over and flew wings-level into the water, with both afterburners still lit.

### Discussion

There were several NATOPS violations in the events leading up to this accident, i.e.:

- The pilot flew a VFR pattern after turning downwind following his first waveoff. The CVA/CVS NATOPS Manual, page 5-21, states in part: "If no instructions are received on downwind, a jet aircraft will proceed to four (4) nautical miles DME and then commence turn to final."

- The pilot continued his approach after being waved off and without clearance to land. General NATOPS (OPNAVINST 3710.7F) states: "A waveoff is mandatory when ordered by the control tower, runway duty officer, or wheels watch, unless the pilot is experiencing an emergency. The waveoff may be given by radio, light signals or red flares." In addition, the CVA/CVS NATOPS Manual, page 5-28, states: "At one-quarter mile, the pilot shall execute his own waveoff without acknowledgement of positive control by the LSO. Acknowledgement may be a radio or visual signal."

The LSO NATOPS Manual, page 7-3, states that the pilot will not land without a visual or radio acknowledgment by the LSO. No positive control signal was given by the LSO at any time during the approach.

- The pilot retarded his throttles after touchdown in violation of the F-4J NATOPS Manual, page 3-39, which states: "As the aircraft touches down, advance power to military. Upon completion of landing rollout, reduce power to idle."

Obviously, this accident might have been prevented had not the mixup in radio frequencies occurred. The activation of the mirror waveoff lights should have been sufficient to cause the pilot to waveoff – but it wasn't. Nevertheless, it can be concluded that a radio command to waveoff, if received, probably would have been obeyed. That the LSO's command, issued by radio, was not received by the pilot can be attributed to two things:

(1) The mixup in radio frequencies caused when the 1JG telephone talker erroneously advised the LSO that the aircraft was on VFR land/launch frequency. His subsequent correction was not received by the LSO.

(2) The primary communications system for the

LSO is the ship's channelized UHF radios with selector switches located on the LSO platform. Guard channel is not available on this radio. However, two additional radios, an ARC-27 and an ARC-51, are installed on the LSO platform. One radio is normally tuned to monitor guard, and the other channelized and available for backup in the event the primary radio should fail. Standard LSO procedure directs that guard frequency be utilized whenever communication difficulties arise. At the time of the accident, the ARC-27 radio had been removed and was in the shop for maintenance. The ARC-51 was temporarily inoperative awaiting repair by the radio shop.

This accident might have been prevented by an LSO radio call on guard channel.

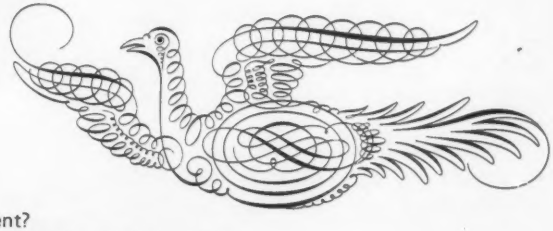
The initial waveoff of the aircraft came as a result of confusion concerning the gross weight of the aircraft. Standard operating procedure at the time of the accident required each F-4 pilot to confirm his gross weight when commencing his pass. Since the accident, the procedure aboard this particular ship has been changed, i.e., when it is determined that light winds will require F-4 recovery at fixed arresting gear weight settings, CATCC notifies and obtains acknowledgement from each F-4 as soon as practicable. Voice calls by aircraft leaving marshal, ball calls, and abeam downwind calls are *fuel states* in accordance with NATOPS. Variations in the basic weight of individual *Phantoms* are as much as 300 lbs. Therefore each pilot/RIO is responsible for computing the gross weight of his aircraft and complying with announced wind-over-deck/weight limitations. In addition, a day and night hand signal has been established for passing the required weight limitation to a NORDO wingman.

Finally, it can be said that the contributing factors discussed in this mishap are dwarfed by what appears to be the pilot's absolute violation of basic safe aircraft recovery procedures. An endorser to the mishap report commented:

"Continuing an approach without a definable 'meatball' to a carrier landing in the face of 8 seconds of continuous waveoff lights can only be described as a gross error in judgment. Whatever the suspected reasons for the waveoff might have been, the pilot had no positive information available to him to indicate that a safe approach and landing could be completed. All carrier aviators should realize without question that a waveoff, either verbal or visual, is always mandatory and shall be executed immediately. The pilot's decision to continue his approach is an example of an unacceptable lack of self-discipline during a critical phase of carrier aviation." ◄



# How Cum?



DID you ever see a bird have an accident?

Some birds make pretty weird landings. That's DESIGN ERROR.

Birds get smashed by hail, thunderstorms, etc., but that's WEATHER FACTOR.

A bird with a broken wing can't fly, but that has to be MAINTENANCE FAILURE.

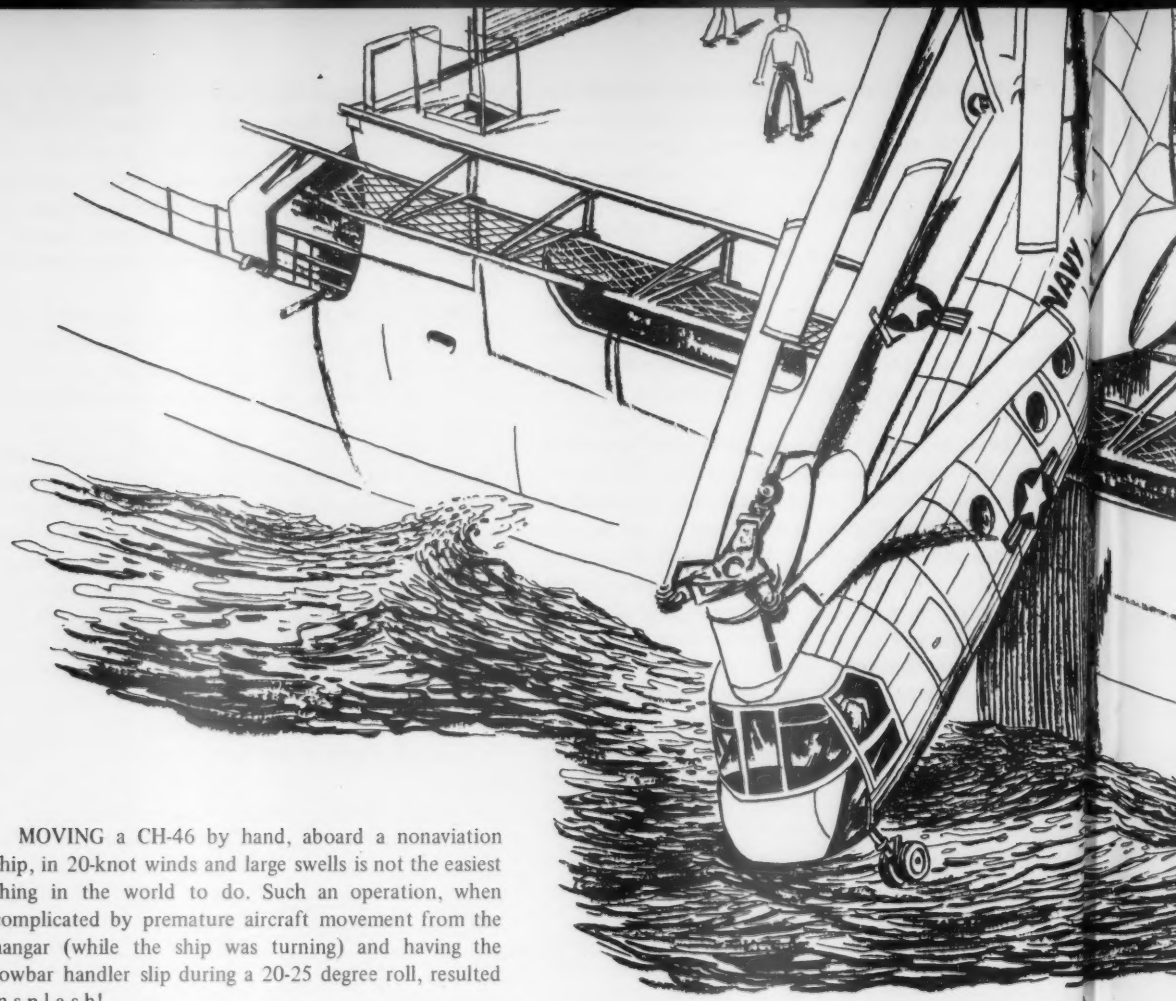
And of course the mother bird may push the youngster out of the nest too soon. Call that SUPERVISORY ERROR.

What I mean is the plain, old garden variety BIRD ERROR accident. Like a bird fails to pay attention to what he's doing and flies right into a tree trunk. Or he gets so engrossed in looking at something that he quits flapping his wings and goes crashing to the ground.

Why is it then that this lowly creature, who can't read, can't reason, and can't benefit from other birds' experience, and who knows only what instinct and his mama taught him, goes through life without having an accident?

And why is it that we thinking, reasoning, superior, intelligent human critters do?

Courtesy U.S. Army *Aviation Digest*






# Thar She Goes

MOVING a CH-46 by hand, aboard a nonaviation ship, in 20-knot winds and large swells is not the easiest thing in the world to do. Such an operation, when complicated by premature aircraft movement from the hangar (while the ship was turning) and having the towbar handler slip during a 20-25 degree roll, resulted in s-p-l-a-s-h!

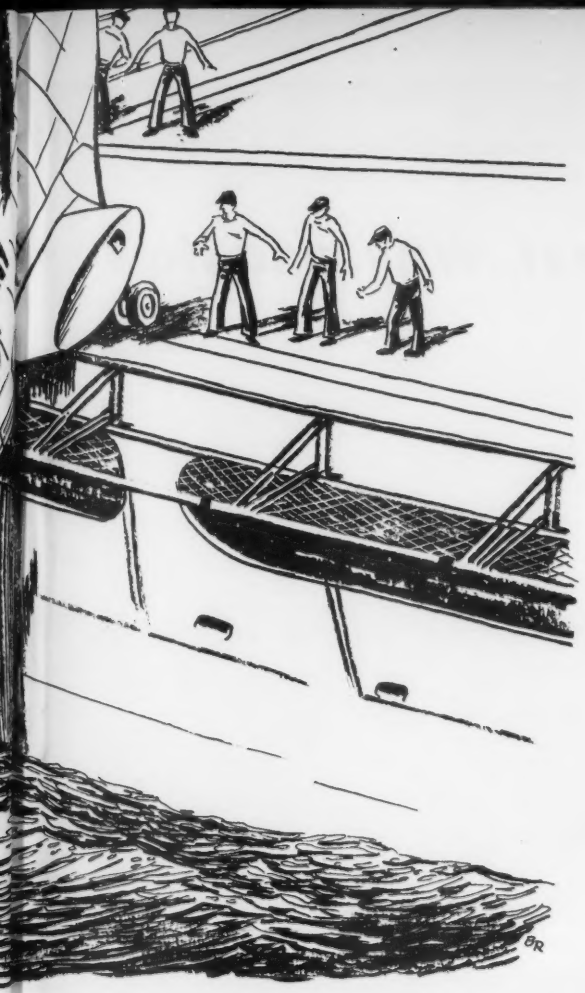
It was a bright, sunny afternoon somewhere at sea when flight quarters sounded on the 1 MC. The ship was heading 160 downwind with 5-foot waves and 5-foot swells all from the west.

The ship's OOD and the helicopter detachment O-in-C agreed that under existing conditions it would be best to alter course downwind/downswell – to about 115 degrees. This would reduce rolling action of the ship during launch and recovery of the helo. The helo det's crew, 12 strong, was qualified and familiar with shipboard aircraft handling procedures.

The aircraft handling crew consisted of three pushers on the port stubwing, two on the starboard stubwing, a chockman on each mainmount, two pushers on the nose, a towbar handler, a director, and a brake rider. They began muscling the H-46 from the hangar to the flight deck, as was their custom when flight quarters was sounded.

Movement was slow and deliberate because of the ship's pitching and rolling. The towbar handler castered the nose 20 degrees off the helo's centerline to position the *Sea Knight* at the designated spot on the ship's centerline. The call for chocks was given by the detachment O-in-C over the 5 MC – just as the ship rolled 20-25 degrees to port. The brake rider applied full brakes, and the chocks were thrown under the mainmounts.

Despite these precautions, the helicopter began sliding to port. The mass of the helicopter pushed the



chocks aside, the towbar handler slipped or was pulled off balance by the castering nosewheel, and the aircraft swung more to port – picking up speed. Last second, frantic efforts to prevent the inevitable were in vain. The helo slowly went over the side, hung up briefly in the safety net, then slid into the ocean nose low. It rolled inverted, and, in about 20 seconds, sank from sight in 3000 fathoms of water.

The brake rider was unable to find the emergency door release, but escaped through the copilot's window. He was promptly rescued by the ship's motor whaleboat.

The investigation revealed many important matters of interest to nonaviation ships' personnel as well as to crews of helicopter detachments.

- The aircraft was moved in adverse sea conditions. Previously, authorization from the bridge to move helicopters was not required. The mishap board strongly recommended that such authorization be SOP in the future.
- The nonskid surface on the flight deck, applied by ship's company, was unauthorized for use on nonaviation ships and was unsatisfactory and ineffective.
- The chocks in use were the wooden type, although metal chocks were aboard but were being used elsewhere.
- The brake rider was not wearing survival gear, nor did he have his seatbelt and shoulder harness secured. Strangely, this may have saved his life. Upon impact, the pilot's seat broke free and threw him up and forward into the windscreen. (Assuredly the seats need to be strengthened to withstand more impact than this.) He escaped through the copilot's window. His experience and training saved him; but all brake riders must be properly equipped, strapped in, and checked out in emergency escape routes.

Kudos to the ship's rescue boat crew who responded so quickly when "man overboard" was sounded and picked up the brake rider.

The future of helicopter operations aboard nonaviation ships is one of increased tempo. It is the responsibility of both ship's company and helicopter detachment personnel to thoroughly understand each other's problems. It is also important that more standardization of procedures, better communications, and adherence to SOP be conducted full time.

Suggestions for improved helicopter operations aboard nonaviation ships have been received at NAVSAFECEN which require serious consideration. A few of these are:

- Develop criteria to determine *when* normal flight operations should be curtailed for various classes of nonaviation ships. For example, in this accident it is believed that the high CG of the CH-46 might have caused it to roll over on deck, even if it had not skidded and gone over the side during the 20-25 degree roll. Would tiedown chains (walking the helo from padeye to padeye) hold a helicopter during sudden, rapid rolls?
- Flight deck nonskid surface preparation and inspection should be according to specs and at prescribed intervals. This ship was operating under a deck certification waiver. It had not been inspected in 3 years.
- What about installing deck-edge coamings?
- Would it be practical to outfit hangar equipped nonaviation ships with mules to tow helicopters?

Further, seat security in the H-46 has been under investigation for many months. Various fixes which have been attempted have not proven to be satisfactory. A complete seat redesign is under study now but has become one of the many victims of austere funding. ◄

Until the highly successful methods used by instructors in the Training Command are changed to something better, it makes good sense to continue to use a proven method of instructing like

# What, Why, and How

BILLBOARDS throughout the country have recently appeared with the slogan *Nobody Likes To Fight* in big letters *but someone has to know how* in small letters. The sign is a recruiting gimmick implying, of course, that someone has to be trained in case a need arises.

Training flights are also conducted for the same reason. You practice, simulate, and conduct flights to develop pilot skills to handle routine operations, tactical requirements, and emergencies whenever the need arises.

Generally, training flights are conducted by a few experienced IPs (instructor pilots) designated in writing by their COs. Selection as IP is based on experience in model and demonstrated performance. So far, so good. However, in most squadrons little emphasis is placed on the technique of instruction – that very important aspect of imparting knowledge and demonstrating required pilot skills to others. Most squadron instructor pilots are able to perform flawlessly themselves, but some are unable to explain "how to" to others. There's an old saying applicable here: "Them what knows it can't necessarily teach it."

Another weakness which is readily apparent, after a review of accident reports, is failure of some IPs to critically define just how far they will let a PUI (pilot under instruction) go before assuming control.

One final point in this discussion is the incomplete

briefing, between the IP and PUI, prior to some new maneuver being introduced.

An example of each of these points is illustrated by the following incident. An IP in a P-3 introduced a simulated two-engine-out landing with No. 3 and 4 engines set at zero thrust.

The PUI was an individual about ready for his PPC check. The buildup during the training flight prior to the maneuver had been gradual. Squadron policy required instructor pilots to demonstrate this maneuver prior to being designated instructor pilot. (Squadron policy did not require this for prospective PPCs.)

Touchdown was 2000 feet from the approach end of the runway. The PUI placed the good engines in reverse and No. 3 and 4 to flight idle. The aircraft predictably swerved left, and the PUI counteracted with right rudder. As the swerve became progressively worse, the PUI applied hard, right rudder and brake and took No. 1 out of reverse. As the aircraft neared the left edge of the runway, both starboard tires blew.

The IP took control and set max power momentarily on No. 1 and 2 engines. The port MLG departed the runway; but after about 500 feet of travel, the aircraft returned to the runway. The P-3 then began a right skid, blew out both port tires, and stopped – cocked 45 degrees left of runway heading with 1500 feet of concrete still remaining.

That sort of reminds you of the one liner, "Other than that Mrs. Lincoln, how did you like the play?"

The incident was pure and simple pilot error – a direct result of improper procedures and techniques of both the PUI and the IP. The CO made the following comments:

- When the time came to execute the maneuver, neither pilot was fully aware of the intended actions or responsibilities of the other . . . in two-engine, asymmetrical reverse.
- . . . simulation and execution of practice emergencies potentially pose a degree of risk that exceeds that which is encountered in an actual emergency.
- It is the policy of this command thaf procedures set forth in the *P-3 Pilots Flight Instructor Guide* be closely adhered to.
- The IP failed to brief the PUI on his intended actions and assistance required in executing the landing. Because the briefing was omitted . . . neither pilot was aware of responsibilities or intentions with regard to power lever movements for the two-engine, asymmetrical reverse evolution. The PUI was not instructed to bring No. 1 and 2 power levers into the Beta range and to hold the power levers for No. 3 and 4 engines at ground start. The IP remained unaware of the problem throughout his belated attempts at corrective actions.
- It is necessary that IPs religiously adhere to prescribed *standard instructional procedures* to compensate for lesser proficiency, compared to combat replacement squadron counterparts.
- The results of the departure from standard procedures were nearly catastrophic.

What, Why, and How won't guarantee that a maneuver will be executed properly, but it sure will eliminate a lot of doubt and uncertainty. ◄

# F*O*G spells 'Scary'

MOST carrier-based pilots, both rotary and fixed-wing, run into a situation or two during their lifetime which borders on the *scary*. There are usually two familiar factors present, weather and low fuel state.

There can be other deterrents to normal operations such as fouled-up communications, unreliable vectors, and mechanical problems; but the two which occur in nearly every hairy tale are *mother nature* and *little petrol*.

It's bad enough when tooling around stateside wondering what alternate you can make; it's worse when your primary and alternate is USS BIRDFARM all rolled into one. Let's follow one story received via Anymouse.

We launched from BIRDFARM, climbed through a low overcast, broke out on top at 1000 feet, and headed for NAS Beach, VFR on top – without problems. We were scheduled to refuel and return. After landing, however, and upon checking with aerology, we learned BIRDFARM was near zero/zero in fog. The entire coast was zero/zero except NAS Beach, which was expected to join the group within 2 hours.

Operations refused to let us file to BIRDFARM without an alternate, and there was none. We sent a message and asked for instructions. BIRDFARM advised us to return ASAP and gave an expected position well to the south where they expected to be clear of the fog. Unknown to BIRDFARM, NAS Beach had a fog report from another ship, 70 miles south of BIRDFARM – zero/zero.

Dutifully we filed anyway, but FAA reared its head – no alternate, no go. We sent another message advising of the bind we were in and announced we'd try again in the morning.

The next morning BIRDFARM was reporting 3000 broken, variable overcast, and expecting the weather to deteriorate. NAS Beach, like the weather guesser had predicted, was zero/zero and forecast to remain closed until early afternoon.

About 1030 NAS Beach improved to minimums. We filed, launched, and broke out at 700 feet on top. Overhead 2½ hours later, we found BIRDFARM in and out of fog with deteriorating weather. In the pattern there were fixed-wingers and rotaters. We were still whirling away with only 10 minutes to bingo.

One stiff-winger, sent on a weather check, advised of a possible area about 30 miles south. Bingo time came and went. Now it was BIRDFARM or get wet – *only two choices*.

The first two helicopters cleared for approach broke out above minimums and landed. We were the third helo cleared; and, after being vectored around and about to avoid other traffic, we commenced a CCA final. At minimums we saw nothing and waved off. As we executed a missed approach, we caught one fleeting glimpse of BIRDFARM off to starboard.

We were cleared for another approach and decided if we didn't make it this time, we'd ask for vectors to 5 miles astern and try to sneak aboard by creeping up the wake. Our second approach was successful (we cheated a wee bit). When we landed there were still some stiff-wingers at marshal. Soon afterwards, however, BIRDFARM found a small open area and everyone quickly got aboard.

There is no doubt that of all the meteorological bad news, the worst is fog. No one likes it – auto drivers, pedestrians, boat drivers, birds, and aircraft drivers least of all. It can spoil . . . etc.

One thing for sure, making an approach in fog requires *faith* in the system, *hope* that it really isn't solid all the way to the deck, and *precision* in flying the aircraft. The first two you have no control over, but the last separates the men from the boys. If you're exactly on heading and altitude, at the right angle-of-attack, and on speed, you've done all you can do.

The Constellation Boötes.

# Letters
## to the Editor

If you must drink while you drive, turn up the radio so you won't hear the crash.

Henny Youngman

### Extra Copies Please

*APO, San Francisco, Calif.* – I have just read your March 1972 issue and as usual it was great, particularly the article, "Autorotation," on page 18.

I am the senior helicopter adviser for the VNAF 2nd Air Division. The division has six chopper squadrons – five UH-1H and a CH-47. If possible, I would like to get six copies of this issue so I can put a copy in the pilot's reading file in each squadron. I believe all the VNAF pilots would enjoy and learn from the article.

LTCOL John M. Slattery, USAF
AFAT-2

P.S. Your April issue just arrived before I mailed my letter. If it is not asking too much, may I also have six copies of the article, "Tail Rotor Emergencies," in the April issue?

**• Thank you, Colonel, for your kind words. Your six copies of each issue should have since been received.**

### Cockpit UNcoordination

*FPO, San Francisco* – Several years ago, during a WESTPAC deployment aboard a CVA, I had a frightening experience which may shed some light on other, unexplainable night helicopter crashes – immediately after takeoff.

I was the aircraft commander of a *Seasprite*, and our mission was routine, night planeguard. Weather was CAVU and had nothing to do with the incident. Our turnup was normal; and all systems checked good on deck, including all portions of the ASE (automatic stabilization equipment).

Pri-Fly cleared us to lift and directed a starboard turn when clear of the bow. We completed the takeoff checklist; and just before lifting, I called for the ASE. I had been accustomed to having my copilot select altitude control, BAR ALT, of the ASE for all night takeoffs. I *assumed* he selected BAR ALT, but he gave me only the basic ASE when I requested it.

Takeoff, departure, and climb were normal. At 300 feet I pressed the BAR ALT button on my collective while looking outside to locate the carrier. My copilot was supposed to be on the gages while I made the visual check for the ship.

Moments later one of my alert crewmen yelled, "Pull up! Pull up!" The RAWS (radar altimeter warning system) failed to give either the visual or audio warning that we were descending through 100 feet or the 30 feet we had preselected on the radar altimeters. I pulled in collective, *right now*, and noticed we were only 20 feet above the water.

It took quite a while for the adrenalin to stop pumping through my system, for the sweat to dry, and for the saliva to return to my mouth. The next day I called an APM and briefed the rest of the pilots on our near-miss, but somehow the incident was never reported.

I strongly suggest that all H-3 pilots start making the collective clutch test (page 4-27 of the H-3 NATOPS) a part of their ASE check. The BAR ALT button on the ASE panel will light up when depressed even if the altitude controller under the pilot's seat is not connected. You know, a guy could be counting on the BAR ALT to keep him at altitude and end up in the water.

LT R. L. Johnson
Safety Officer HC-1, Det 2

**• Glad you got around to sharing your experience. Regardless of the time lapse, your information is timely. Why? Because it will happen again, under similar circumstances, to someone else.**

**There are two comments to be made concerning your experience. One is that, because of the strange language we use, the individual who hears a command may not interpret it the way the speaker intends. The way to avoid cockpit misunderstanding is to *conduct a thorough brief*. If you want the ASE ON *and* BAR ALT ON, say so. Don't assume, and don't rely on habit.**

**The other point is that cockpit performance, in flights of this nature, must be so disciplined, through training and practice, that when one pilot is visual the other is on the gages. Any questions?**

### Likes Article

*APO, San Francisco, Calif.* – The article, "Flying in High Density Areas," by LCDR J. R. Howard, in the April 1972 APPROACH is one of the best of its type. As an air traffic controller working in a high density area (Da Nang AFLD, RVN), I would like to commend you for publishing the article. If all pilots would take the little effort and time to follow the author's advice, the services provided by controllers would be complete and easier to provide. Thus, the controller might not seem so "curt."

Continued

APPROACH welcomes letters from its readers. All letters should be signed though names will be withheld on request.

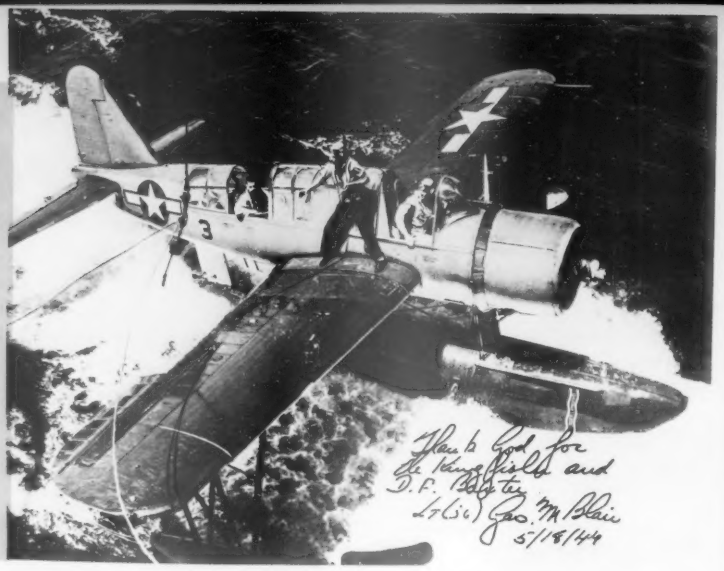
Address: APPROACH Editor, Naval Safety Center, NAS Norfolk, Va. 23511. Views expressed are those of the writers and do not imply endorsement by the Naval Safety Center.

## Kingfisher

*Dallas, Texas* – RADM K. C. Childers' letter in the June APPROACH, with the accompanying photo of a *Kingfisher* rescuing LT George M. Blair during Truk operations in WW II, caught my eye.

Our historic picture files contained the same photo with LT Blair's fervent opinion of the plane that plucked him out of the Pacific. I thought you'd like to see the autographed photo.

Arthur L. Schoeni
Customer Relations Dept.
Vought Aeronautics Co.




From the controller's viewpoint, I would like to add that jargon used by Navy pilots and controllers might not be clearly understood by FAA or Air Force controllers. Thus, terms like "bingo fuel" may mean nothing. If all pilots will think of this, air traffic control can only be improved.

SSGT William B. Hobson, Jr., USAF
1972 Comm Sq Dr 20 (FF)

## On Preventing Gear-Up Landings

*FPO, New York* – APPROACH carried an article about a near wheels-up landing by a P-3. The circumstances leading up to this incident, and others very similar, are made to order for the maneuver known as an "Unintentional Wheels-Up Landing." Some 15 years ago in this same magazine, I read a suggestion by a Marine pilot that seemed to come closer to eliminating this maneuver than any other. Specifically, he stated that he practiced the habit of saying aloud, "Gear checked down on short final," at the same time physically touching the gear handle and looking at the indicator. Within a month, this habit saved me from a near wheels-up landing in an S-2.

GCA had given me a waveoff at 100 feet because of a radar malfunction. As I pulled the gear up and added power, I broke into the clear, called VFR, and was cleared to land. I lowered the gear and completed the landing checklist, but did not recheck my wheels indicators. On short final I used the Marine's procedure, touched the gear handle, and looked at the indicators. Nosewheel barberpoled . . . waveoff, recycle, three down and locked . . . land! Since then that procedure has been used by myself and everyone else I can convince.

While at my last two duty stations, we had it incorporated into the written landing checklist as "gear check on short final." Whether inadvertently waved off or otherwise diverted, the plane always returns to "short final" before landing. This procedure, if developed into a habit, should save a few.

Wheelsmouse

**• Sounds good. Let's run it up the flagpole and see if anyone salutes.**

### Old Magazines?

APPROACH needs copies of its earlier issues to bolster depleted files. Needed particularly are copies of October 1963 and December 1966 magazines; however, we will be happy to receive copies of any issue dated 1965 or earlier. If you have old copies and have no particular need for them, please forward them to:

Editor, APPROACH
Naval Safety Center
Naval Air Station
Norfolk, Va., 23511

## Keep Up the Good Work

*Warminster, Pa.* – For some time I've been intending to write and tell you what an excellent job I think you and your people do with APPROACH. So, now I'm doing it.

As editor of NADC's house organ, the *Reflector*, I am always on the lookout for new layout and design ideas. APPROACH supplies me with many.

Your layouts are imaginative. Keep up the good work.

Jim Murphy
Public Affairs Office
Naval Air Development Center

**• Thanks for your kind words. We think our artists are as professional as they come.**

## Gear Report

*NAS Quonset Pt.*, – Recently I read an article in one of the Navy's many safety magazines about the phenomenal cost of gear-up landings. The last point made reassured all sea lawyers that gear reports are not mandatory. In my opinion, if it will prevent an accident, it should be required: first, by the pilot; and second, by the tower, after the pilot has had his chance.

The validity of my next suggestion is somewhat questionable since out of 1200 hours, I have only 600 hours in aircraft with retractable gear. The H-3 has nine items to be checked prior to landing of which only one, if omitted, will damage the aircraft. Yet, it is at the tail end of the checklist. My thoughts are that the most important items should be

## FLIP Changes

THE DEPARTMENT of Air Force, Headquarters Aeronautical Chart and Information Center, St. Louis, Missouri, has notified the Naval Safety Center of the following changes to FLIP documents:

● . *Clearance Readback:* There is no requirement that an ATC clearance be read back as an unsolicited or spontaneous action. Controllers may request that a clearance be read back whenever the complexity of the clearance or any other factors indicate a need. The pilot should read back the clearance if he feels the need for confirmation. He is also expected to request that the clearance be repeated or clarified if he does not understand it.

● *High Performance Aircraft in Terminal Areas – "Keep 'em High":* The FAA has initiated a program known as "Keep 'em High." Arriving IFR high performance aircraft will be kept at the highest possible altitude as long as possible. Departing high performance aircraft will be climbed to the highest possible altitude filed by the pilot as soon as possible. The program is intended to reduce the mixture of high performance controlled aircraft with uncontrolled aircraft in the vicinity of the airport. This program is also intended to provide noise relief to the community surrounding the airport. Details on "Keep 'em High" are being published in FLIP Planning Section II, North/South America Special Notices section.

first. Maybe that "break in habit" won't get another aircraft.

R. B. Harmon
ASO, HC-5

● We don't know to which article you refer, but an article in the Oct '71 issue of APPROACH addressed the problem of intentional, gear-up landings; and an article in the July '72 issue of APPROACH addressed unintentional, gear-up landings.

The latter article sets forth the many apparent reasons for this booboo. A gear check is now required at all Army, Navy, Air Force, and civilian airports having controllers. It is a pilot's responsibility, *and only his,* to cover the landing checklist completely. OPNAVINST 3710.7F, para 520 (c) says, "A wheels-down report shall be given as the aircraft turns onto the base leg or after lowering the landing gear on a straight-in approach. The controller shall remind the pilot to check wheels down at an appropriate position in the pattern, unless the pilot has previously reported wheels down." Notice the similarity between the language in General NATOPS and the FAA Terminal Air Traffic Control Manual, 7110.8B, Section 7, para 424 (Wheels Down Check), "Remind aircraft to check wheels down when it reaches an appropriate position in the pattern, unless the pilot has previously reported wheels down." The responsibility can't be shared or shifted, *in any way*, from the pilot to the tower controller.

While there may be some merit to moving "landing gear" to the top of the checklist, accident data and the sequence of checklist items before landing may not support it. Wheels-up landings in helicopters, in nearly every instance, have resulted from *failure to use the checklist,* rather than from *failure to complete* the checklist. ◄



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Vol. 18 **approach** No. 3

RADM W. S. Nelson
Commander, Naval Safety Center
Publisher

Our product is safety, our process is education and our profit is measured in the preservation of lives and equipment and increased mission readiness.

Contents

1 Eject! Eject!
4 Knowledge vs Desire
By Dr. Victor E. Schultze, Jr.
6 In The Readyroom
8 The 'New Approach' Continues
10 Coolstone and the Weatherman
By Roger G. Crewse
16 ThermoUNcoupled
17 Is It A Bird?
18 Skid Operations Aboard The AMPHIBS
23 Sludge The Magnificent
24 Happiness Is A Beautiful Radar Picture
By D. A. Behnke
26 Have You 'Learned To Return?'
By LT Dick Ritz
29 Social Subterfuge
48 30 Deployment Bound
By LCDR M. J. Bartolomei
32 How It Was
36 Phantom Phlub
40 Thar She Goes
42 What, Why, and How
44 F*O*G Spells 'Scary'
IBC FY-72 A Record Year

Departments

14 Anymouse
34 Notes From Your Flight Surgeon
45 Letters

NavAir 00-75-510

**Purposes and policies:** Approach, published monthly by the Naval Safety Center, presents the most accurate information currently available on the subject of aviation accident prevention. Contents should not be considered as regulations, orders or directives and may not be construed as incriminating under Art. 31, UCMJ.

**Photos:** Official Navy or as credited. Non-naval activities are requested to contact NAVSAFECEN prior to reprinting APPROACH material.

**Correspondence:** Contributions are welcome. The right to make editorial changes to improve the material without altering the intended meaning is reserved. Reference to commercial products does not imply Navy endorsement. Views of guest written articles are not necessarily those of NAVSAFECEN.

**Distribution:** Requests for distribution changes should be directed to NAVSAFECEN, NAS, Norfolk, Va. 23511. Phone: Area Code 703, 444-1321, Att: Safety Education Dept., IF YOU ARE A PAID SUBSCRIBER, address all renewals and address changes to Division of Public Documents, Washington, D. C. 20402.

**Subscriptions:** Single copy 55 cents; 1-year subscriptions $6.00; $1.50 additional annually for foreign mailing.

**Printing:** Issuance of this periodical approved in accordance with Department of the Navy Publications and Printing Regulations, NAVEXOS P-35. Library of Congress Catalog No. 57 60020.

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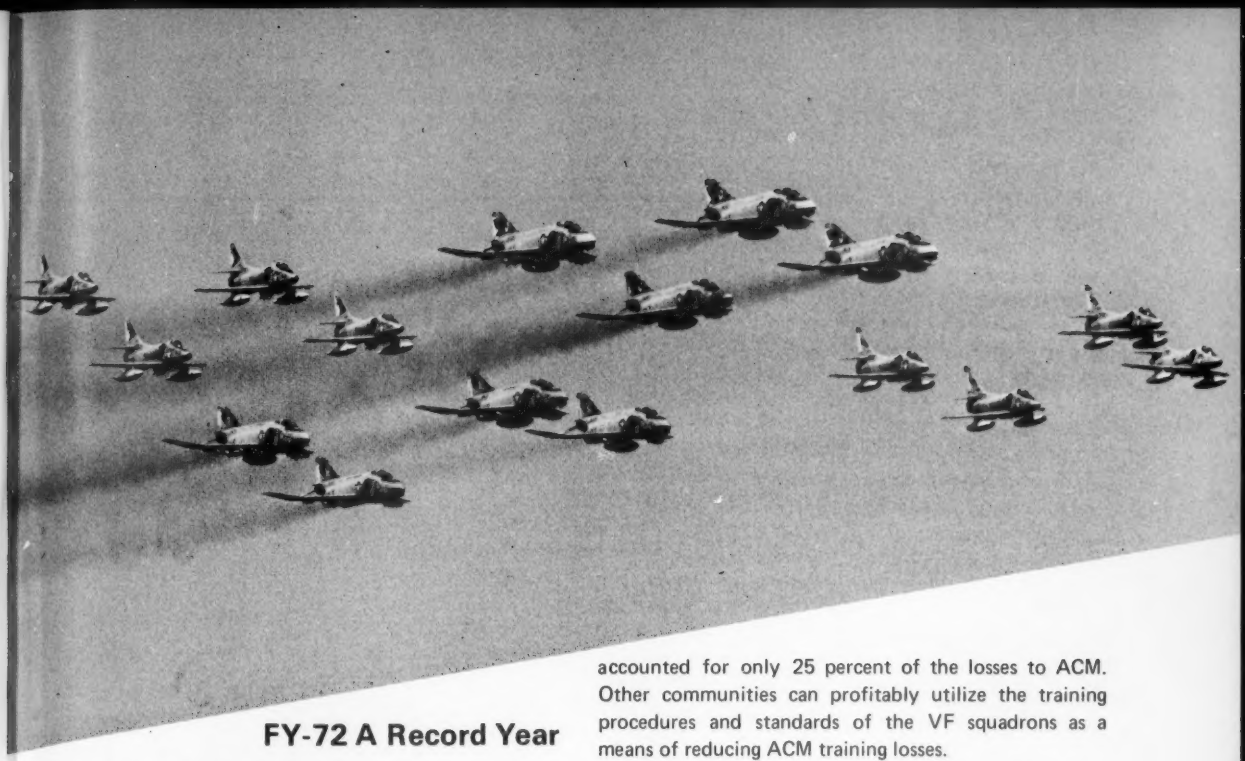
This month's cover by Howard Boyle, of Boeing-Vertol, features the Navy's CH-46 in action delivering supplies to the Fleet. **Pg. 46** Photo courtesy LTV.



## FY-72 A Record Year

A RECENT CNO message notes that naval aviation recorded its safest year in history during FY-72. The substance of this message stated:

Tentatively, we have established an accident rate of .89 per 10,000 flight hours for FY-72. This decrease in the accident rate (the first time ever below 1.0) clearly reflects the close attention and personal efforts of command at all levels as well as the hard work, attention to detail, and professionalism in operating units. I wish to express my personal appreciation for these efforts.

We have made progress, but it must be categorically stated that it is not enough. Our accident rate is far from what we can and must accomplish. Several areas in which flight safety can be dramatically improved are:

- Less than optimum pilot performance was a big factor in 45 percent of the major accidents. Fifty-five major accidents were caused primarily by pilot error. In an additional 51 accidents, inadequate pilot performance contributed to the mishap. This area has great potential for improvement of flight safety by ensuring strict adherence to prescribed pilot performance standards and NATOPS procedures.

- Twelve aircraft were lost in ACM (air combat maneuvering) training. Of these 12, only three were fighters. The remainder were various types, predominantly from the attack community. While the fighters performed the majority of ACM training, they accounted for only 25 percent of the losses to ACM. Other communities can profitably utilize the training procedures and standards of the VF squadrons as a means of reducing ACM training losses.

- Thirty-three accidents occurred during field landings, six of which were unintentional wheels-up landings. At least 21 involved incorrect evaluation of facility/weather conditions by the pilot or other personnel.

- Twelve aircraft were lost as a result of midair collisions. All occurred under good VFR conditions. Positive control is a valuable assist in providing aircraft separation – and we must continue to push this hard – but it is not a replacement for sound air discipline and lookout doctrine.

- Finally, there is an area which is of great concern and has potential for vast improvement. There were 874 ground accidents, 78 of which involved GSE (ground support equipment), that occurred in an environment where the most rudimentary application of caution could have avoided the loss of valuable assets. While these ground mishaps do not count in the aircraft accident rate, they nevertheless result in temporary needless loss of scarce assets, requiring additional maintenance/repair efforts, thus diluting our limited personnel resources, all to the overall detriment of flight safety.

The goal of the naval aviation safety program is elimination of all preventable accidents. A lower aircraft accident rate in FY-73 is the immediate objective with effective programs to eventually achieve the goal of zero preventable accidents.

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